Urban Forest Strategy

2024 - 2034 Implementation Plan

(DRAFT MAY 9, 2024)

Saanich

Land Acknowledgment

The District of Saanich lies within the territories of the ləḱʷəŋən peoples represented by the Songhees and Esquimalt Nations and the W̱SÁNEĆ peoples represented by the Tsartlip, Pauquachin, Tsawout, Tseycum and Malahat Nations. The First Peoples have been here since time immemorial and their history in this area is long and rich.

The District of Saanich is proud that our name is derived from the W̱SÁNEĆ peoples. Saanich Council is committed to taking a leadership role in the process of healing wounds of the past and becoming a more just, fair and caring society.

The District of Saanich acknowledges that "urban forestry" and "urban forest management" are presently rooted in a Western science perspective on understanding trees and their role as natural assets providing services to communities. In contrast, some Indigenous worldviews see trees as living relations, rather than primarily as objects that provide benefits to humans. The authors acknowledge that more work is needed to integrate Indigenous ways of knowing with Western ways of knowing in planning and managing Saanich's urban forest.

Acknowledgments

DIAMOND HEAD

Glossary

3:30:300 Rule
A "guiding principle" for urban forestry based on academic research that seeks to ensure all people have adequate access to trees and greenspaces. The rule states that at least 3 trees should be visible from each home, each neighbourhood should have 30 per cent (or more) canopy cover, and each home should be within 300 m of a park or other greenspace. Council endorsed the 3:30:300 Rule in June 2021 for the District's urban forest management.

Assisted migration
The process by which people facilitate the genetic transfer of wildlife, plants, or other living things from one part of the world to another, for the purpose of reducing mismatch between organisms and their environment. Assisted migration is frequently discussed as one strategy to address the impact of climate change on forest ecosystems.

Biodiversity
Biodiversity is a term used to describe the variety and variability of life on Earth. Biodiversity encompasses all living species and their relationships to each other. This includes the differences in genes, species, and ecosystems.

Caliper tree
A tree which was grown to at least 4 cm in diameter in stem/ trunk measured 15 cm above ground level in a tree nursery prior to being planted in its current location.

Canopy cover
A measure of the extent of the urban forest based on the amount of ground covered by the foliage of trees when viewed from above.

Ecosystem functions
The ecological processes that control the fluxes of energy, nutrients, and organic matter through an environment[1].

Ecosystem services
The benefits to humans provided by the natural environment and healthy ecosystems. Carbon sequestration, recreation, shade, water filtration, and pollination are all examples of ecosystem services associated with the urban forest.

Exceptional tree
A tree that constitutes an important asset to the community, on account of its cultural significance, biodiversity contribution, and/or large canopy area such that its ecosystem services are difficult to replace.

Green infrastructure
Natural and semi-natural areas with environmental and engineered features designed and managed to enhance nature's ability to deliver a wide range of ecosystem services[2].

High value tree
Includes trees that are worthy of retention efforts based upon the review of a professional (International Society of Arboriculture [ISA]) arborist that includes criteria such as age, structure, health, vitality, species, the tree's ability to withstand development activities in and around its above and below ground structures, the suitability of that tree relative to its location and on-site use and infrastructure, and the feasibility of the techniques required to retain the tree. These criteria help inform when and where extra efforts can be focused to practically retain trees with an excellent chance of thriving into the future. This definition does not mean to negate the fact that all trees embody multiple values. (Source: Saanich's Development Permit Guidelines.)

Impervious surface
A surface that does not permit the infiltration of water or air needed by tree roots. Asphalt and concrete are common impervious surfaces.

Invasive species
A species that is not native or is outside of its natural range and is negatively impacting the environment.

LiDAR
Acronym for 'light detection and ranging'. An active remote sensing technology that can measure vegetation height and elevation using laser scanning.

Natural asset
Natural assets are the stock of natural resources or ecosystems that are relied upon, managed, or could be managed by a local government for the provision of one or more services to a community[3].

Private tree
A tree not owned by the District of Saanich.

Public tree
A tree owned by the District of Saanich, typically on District of Saanich-owned property.

Significant tree
A tree listed in Schedule B of Saanich's Tree Protection Bylaw (2014, no. 9272). Significant trees have the highest level of protection by the Tree Protection Bylaw.. Significant trees in Saanich are designated because of their importance to the community for heritage, landmark value, or wildlife habitat.

Tree equity
When all people can access the benefits of the urban forest in proportion to their needs.

Tree inequity
When people of different backgrounds, socioeconomic status, and other demographic factors experience unequal access to the benefits of the urban forest.

Urban Containment Boundary
A feature of Saanich's Official Community Plan that identifies where urban land uses and service standards will be developed. Areas outside the Urban Containment Boundary are predominantly agricultural, natural open space, industrial resource management, and residential uses at very low densities.

Urban forest
All trees within the District of Saanich, including those in private yards, urban parks, conservation areas, boulevards, and natural areas.

Urban forest program
A set of activities performed by District of Saanich staff and community partners to plan, manage, enhance, protect, and steward the urban forest, as well as all related policies, equipment, resources and knowledge used to work towards Saanich's urban forest vision.

Wildlife Tree
While all trees can provide wildlife habitat value, wildlife tree is often used to describe dead, standing trees which gradually decay, providing specific habitat for some wildlife such as cavity nesting birds.

English— SENĆOŦEN Tree Names

The urban forest in Saanich depends on the resilience of native tree species and biodiversity. These native species provide over half of the municipality's tree cover and are found in every neighbourhood. SENĆOŦEN names for these species have been compiled by Nancy Turner and Richard Hebda[4]. These names are presented alongside the English common name and scientific name below. SENĆOŦEN includes several sounds that are unfamiliar in English. W̱SÁNEĆ School Board has published SENĆOŦEN: A Dictionary of the Saanich Language, which includes a guide to pronunciation of SENĆOŦEN characters[5].

The District of Saanich is on the traditional territories of two Indigenous language groups (SENĆOŦEN and ləkʷəŋən-speaking peoples). The District is interested in learning the ləkʷəŋən names for tree species also and would like to work with the Songhees and Esquimalt Nations to add these to its understanding.

English Common Name	SENĆOŦEN Name	Scientific Name
Arbutus	ḴEḴEYIȽĆ	*Arbutus menziesii*
Bigleaf maple	ȽŦÁ,EȽĆ	*Acer macrophyllum*
Bitter cherry	SĆEȻENIȽĆ	*Prunus emarginata*
Black cottonwood	ĆEU,N-EȽĆ or ĆEU,N-EȽP	*Populus balsamifera spp trichocarpa*
Cascara	KÁYXIȽĆ or KÁYXEȽP	*Rhamnus purshiana*
Rocky mountain maple	BEN,Á,YEȽP	*Acer glabrum*
Douglas-fir	JSÁY or JSX̱,IȽĆ	*Pseudotsuga menziesii*
Garry oak	ĆENIȽĆ	*Quercus garryana*
Grand fir	DEW̱I,EȽĆ, SḴEMÁYEX̱S, or SḴEMÍ,EX̱S	*Abies grandis*
Lodgepole pine	ḴÁYÁLEŚIȽĆ	*Pinus contorta*
Pacific crab apple	ḴÁ,EW̱IȽĆ (tree) ḴÁ,EW̱ (fruit)	*Malus fusca*
Pacific dogwood	ȻETXIȽĆ	*Cornus nuttallii*
Pacific willow	SX̱ELE,IȽĆ	*Salix lasiandra*
Pacific yew	ȾENḴÁȽĆ	*Taxus brevifolia*
Red alder	SḴOLNEȽĆ	*Alnus rubra*
Sitka spruce	ȾŦḴÁ,IȽĆ	*Picea sitchensis*
Trembling aspen	ḴEYÁ,LEŚIȽĆ or ḴEYÁ,LEŚEȽP	*Populus tremuloides*
Western hemlock	ȽḴI,EȽĆ	*Tsuga heterophylla*
Western redcedar	XPÁY or XPX̱ (tree) SLEW̱I (inner bark) JELX̱ (bark, outer bark) XPÁY,ÁSES (branches) ȻEMLEX (roots)	*Thuja plicata*
Western white pine	ḴÁYÁLEŚIȽĆ	*Pinus monticola*
Yellow-cedar	POŚELEḴ	*Callitropsis nootkatensis*

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Our Community's Shared Vision

The urban forest in Saanich is a thriving, interconnected system of trees and forests across the municipality, nurtured by the entire community to support the health and well-being of current and future generations.

Strategy in Brief

Saanich's urban forest is crucial for the health and well-being of residents and is vital for livability of the community. This updated Urban Forest Strategy builds on the achievements of the 2010 plan, and addresses emerging challenges and opportunities. It aims to ensure the health and resiliency of Saanich's urban forest into the future.

Public engagement and consultation with Indigenous peoples and other community members underpin this update.

The community shares a vision that the urban forest in Saanich is a thriving, interconnected system of trees and forests across the municipality, nurtured by the entire community to support the health and well-being of current and future generations. To support the vision, the Urban Forest Strategy is built around four goals representing themes of urban forest protection and enhancement; day-to-day management; community engagement; and adaptive management. The strategy's implementation plan is focused over a 10-year timespan.

The Urban Forest Strategy establishes a long-term vision and a target of 44% canopy cover for the District by 2064 – a one per cent increase over today's urban forest canopy. A 40 year timeframe was chosen to allow time for anticipated development to occur, and for trees to grow to a size that would replace and exceed canopy loss. Approximately 100,000 trees will need to be planted to achieve the canopy cover target, assuming trees average a medium size at maturity and are planted into quality planting environments. Implementing the plan and achieving our goals and target will require:

- Policy and regulations aligning to integrate new and retained trees into built environments

- Program funding and capacity to increase planting and corresponding maintenance on private land, in parks and streets, and in natural forest areas

- Recognition of the urban forest as a natural asset requiring management and renewal

- Recognition of ÁTOL,NUEL, mutual respect for the rights of others with life

- Community participation and partnerships in growing and caring for the urban forest

- Continuous learning, monitoring and adapting

Goal 1. Protect, connect and enhance the urban forest in harmony with built and natural systems.

Goal 2. Manage the urban forest in alignment with best practices to support healthy, resilient, and safe trees.

Goal 3. Foster a culture of community care for the urban forest.

Goal 4. Build on experience and relationships to manage adaptively.

Achieving 44% canopy cover by 2064

continued native forest restoration and underplanting 50,000 trees and shrubs

planting 20,000 new street trees

planting 28,000 new landscape and yard trees

planting 6,000 new park trees

| Natural Areas | Rural Land | Riparian Areas | Parks | Urban Trees | Foreshore |

1 Introduction

Saanich's Urban Forest Strategy is a long-term vision and plan to protect, connect, maintain, and enhance the municipality's urban forest. Saanich's urban forest includes all trees within the District's municipal boundaries, on public as well as private lands. Trees play a crucial role in defining Saanich's natural and urban landscapes, enriching the community's identity and supporting a high quality of life. The Urban Forest Strategy is needed to protect and enhance the urban forest and deliver benefits for future generations.

This is Saanich's second iteration of the Urban Forest Strategy. It builds on the achievements of the 2010 plan. That initial strategy brought about improvements in tree management, including the enhancement of the Tree Protection Bylaw and the introduction of new street tree planting initiatives. The dynamic nature of the urban forest requires that the strategy be updated periodically to respond to recent and anticipated challenges as well as new opportunities.

The 2024 Urban Forest Strategy was developed following a comprehensive background review which formed the basis of the 2023 State of the Urban Forest Report. This review identified key trends and challenges, and assessed the District's capacity to deliver effective urban forest management. Building on the background review and informed by community feedback, this Strategy puts forward a renewed vision and action plan for Saanich's urban forest.

1.1 How to read the Urban Forest Strategy

The Urban Forest Strategy is divided into the following chapters:

1.0 Introduction

Describes the context and purpose of the Urban Forest Strategy, recent progress on urban forest management, why the Strategy is needed, and how it can be read. The Introduction also acknowledges the District of Saanich's ongoing responsibility to pursue reconciliation in urban forest management.

2.0 Background and Context

Explains key concepts in urban forest management, including what the urban forest is and why it is important. Provides contextual information about geography, climate, Indigenous land management and the history of settlement and urbanization in Saanich.

3.0 What We Have: Status and Trends

Summarizes key findings from the State of the Urban Forest Report about Saanich's tree canopy, forest structure, diversity, and tree equity.

4.0 What We Do: Saanich's Urban Forest Management

Explains how urban forest management in Saanich works, including defining "asset classes" and corresponding "service levels" for urban forest management activities, key policies for tree protection and planting, and the summary "report card" for the District of Saanich's current urban forest program from the State of the Urban Forest Report.

5.0 What the Future Holds

Establishes major challenges and opportunities faced by the urban forest, including development, climate change, forest health, and reconciliation.

6.0 Vision and Target Setting

Reviews what we heard from the community, considers data summarized in the earlier State of the Urban Forest Report and reflects a community vision for the urban forest. Describes goals for the Strategy and measurable targets that can guide implementation.

7.0 A Plan for Action (under development)

Will support the vision, goals and strategies with recommended actions, including priority actions. Some recommendations will include responsibilities, funding implications and propose measurable indicators to help monitor implementation.

1.2 Cultural Context for the Urban Forest Strategy

The lək̓ʷəŋən and W̱SÁNEĆ peoples have inhabited these lands since time immemorial. Information shared by the W̱SÁNEĆ Leadership Council during the creation of the Cordova Bay Local Area Plan provides context for the modern community's place in the landscape. Saanich is seeking to develop its understanding of lək̓ʷəŋən-speaking people's values relating to trees and will continue to develop relationships to inform future urban forest work.

W̱SÁNEĆ law establishes that W̱SÁNEĆ people have obligations to the land, water, and all living things as given to them by XÁ̱ELS̱, (Creator). The story of the great flood relates to the need to uphold these obligations. At some point, W̱SÁNEĆ peoples forgot the teachings of XÁ̱ELS̱, who then caused the water to rise. To survive, W̱SÁNEĆ ancestors boarded their canoes, tying themselves to an arbutus tree at the top of ȽÁU,WELṈEW̱ (Mount Newton) with a large cedar rope. As the flood subsided, the peak of ȽÁU,WELṈEW̱ emerged, and the survivors were able to make it safely back to dry land. They then gathered around the cedar rope and gave thanks. From this experience, W̱SÁNEĆ ancestors named themselves W̱SÁNEĆ, meaning "The Emerging People." It is from this history, and the history of the W̱SÁNEĆ people, that the District of Saanich gets its name.

The forest resurfaces in the history of Saanich's settlement. Written history states that colonial
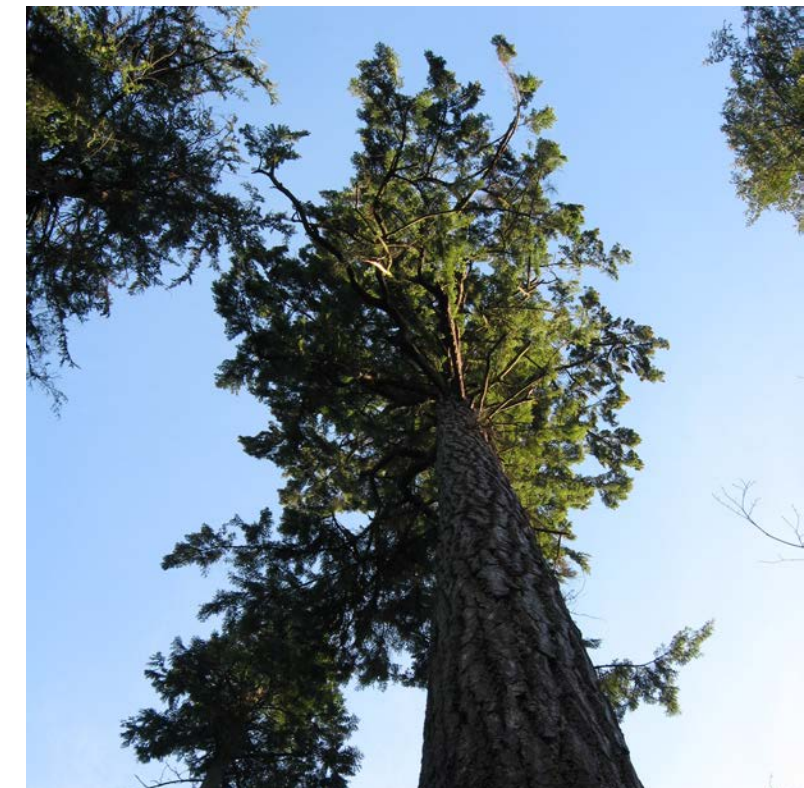
JSȺ̱IȽĆ
(Douglas-fir tree)

JSȺ̱IȽĆ (Douglas-fir) is the most common species in today's Saanich. These are landmark trees capable of growing to heights of 60 m or more over several hundred years. Identify them by their bottle-brush green needles; pointed, red, scaly buds; blistering greyish bark when young or deeply furrowed and grey to cinnamon brown when old. Old trees very often have scars from past fires or broken tops from past storms.

PRONUNCIATION

J	is like "ch" but ejected with a strong pop
S	is like "s" in "sister"
Ⱥ̱	is like "ai" in "bait" followed by a glottal stop ("uh-oh")
I	is like "i" in "machine"
Ƚ	is an unfamiliar sound made by placing the tongue in the position for T and blowing air
Ć	is like "ch"

Say it like CH-sai-lth-ch

governor James Douglas sought to purchase the land from W̱SÁNEĆ people to construct a sawmill and harvest timber. These lands at the time would have held towering forests of centuries-old conifers like JSȺ,IⱢĆ (Douglas-fir) and XPȺ (western redcedar) and rich meadows shaded by ĆEN,Ƚ£Ć (Garry oak). In W̱SÁNEĆ oral history, Hudson Bay Company men were cutting mast poles from forests in the Cordova Bay area contrary to customary law, angering W̱SÁNEĆ people. W̱SÁNEĆ people organized a flotilla of canoes to intimidate the colonists, who feared them and left. Soon after, Douglas invited W̱SÁNEĆ leaders to Victoria, where Indigenous leaders understood Douglas' entreaties to be a peace treaty avoiding the threat of war. The South Saanich Douglas Treaty held that W̱SÁNEĆ people would be able to "hunt over the unoccupied lands, and to carry on our fisheries as formerly."[6] This did not occur, and the actual outcome of the treaty was to suppress Indigenous land management, alter forest landscapes, introduce new species, and establish new urban ecosystems that bear little relation to the region's past.

The Urban Forest Strategy recognizes that the urban forest is defined by its relationship to the modern municipality, yet native plants and ecosystems are still central to its resilience and biodiversity. The District of Saanich acts as a caretaker for the urban forest, including urban trees of many origins and native trees and forests.

1.3 Progress in Urban Forest Management

Since the inaugural Urban Forest Strategy in 2010, Saanich has made positive changes to how trees are regulated and cared for, expanded tree planting programs, and increased public awareness. Updates to the Tree Protection Bylaw increased the number of trees that require a permit to be removed and which must be replaced. The Urban Forest Reserve Fund was established by the District to support tree planting and replacement efforts with the intent to meet a no-net-loss of urban forest canopy cover goal.

Since 2010 the District of Saanich has worked to incorporate the urban forest in plans and policies, recognizing the contributions that trees make to other policy priorities like transportation and climate action. Saanich's 2020 Climate Plan includes a target to double the rate of planting trees as part of a strategy to reach net zero carbon emissions by 2050. This will include planting 10,000 new trees of diverse species by 2025. The District of Saanich is also pursuing a review of its environmental policies through the Resilient Saanich initiative, including a Biodiversity Conservation Strategy to guide stewardship of the natural environment. The updated Urban Forest Strategy will complement the Biodiversity Conservation Strategy, and municipal initiatives related to climate action, by focusing on the needs and care of trees in the municipality – especially those in urban settings. To better reflect the value of trees and urban forest ecosystem services they provide, the District is working to incorporate the urban forest into its Natural Asset program via the Asset Management Strategy.

1.4 A New Urban Forest Strategy: Why Now?

In the past decade, new District initiatives and emerging challenges, such as development pressures, climate change, and the need for greater social equity and reconciliation, have necessitated the Strategy's renewal. There are evolving opportunities to enhance the urban forest, including through improving planting sites, diversifying the tree population, and recognizing the connection between trees and traditional ecological knowledge. Additionally, Council set a District-wide goal in 2023 to plant up to 10,000 trees per year for the next ten years.

Tree canopy change is driven by multiple factors including development to provide much-needed homes, municipal construction works to update facilities and roadways, climate change impacts, and natural "aging out" of trees as they reach the end of their lifespans. While these factors can drive canopy loss, development and urban renewal can also create opportunities for new treed landscapes.

In late 2023, a Ministerial Order under the Housing Supply Act mandated the delivery of 4,610 new dwellings in the District over a 5-year period. While Saanich will be focusing development and densification within the Primary Growth Areas (as defined in the 2024 Draft Official Community Plan), new regulations will also increase allowable housing density on many single-family properties. Meeting provincial housing targets in Saanich will need to be balanced with tree protection, in recognition of the significant asset and cultural values of the urban forest for the community, and the importance of housing.

Consideration of issues of social equity and reconciliation has changed substantially since 2010: the prior Urban Forest Strategy made no mention of the relationship between the District and W̱SÁNEĆ and ləkʷəŋən peoples, nor that some communities in Saanich face barriers to accessing the urban forest – the concept of tree equity. The latest Urban Forest Strategy builds on its predecessor's foundation, offering updated analysis and recommendations to navigate challenges and opportunities in urban forest management.

2 Background and Context

2.1 What is the urban forest?

Saanich's urban forest is all trees within the District of Saanich, including those in private yards, urban parks, conservation areas, boulevards, and natural areas (Figure 1). Urban forests are dynamic, living systems that change with shifting interactions between trees and soils, water, fungi, wildlife, and other plants; disturbances like wind and wildfire; and actions by humans.

Since trees occur across lands of all kinds, the management of urban forest is a collective responsibility shared by the entire community, spanning from Indigenous communities, private residents and landowners to major institutions and municipal government. The District of Saanich plays a prominent role in urban forest management through strategic planning, policy development, and the establishment of bylaws.

2.2 What do we manage urban forests for?

The benefits derived from trees and other green infrastructure are called 'ecosystem services' since they can be thought of as acting in parallel with the roles and functions provided by conventional "grey" infrastructure[7]. Examples of urban forest ecosystem services that offset the need for conventional infrastructure include rainfall interception and avoided runoff[8,9], shading and natural cooling through evapotranspiration[10,11], and filtration of pollutants from water and air[12,13]. The District of Saanich's urban forest delivers an estimated service value of $13.3 million each year and stored an amount of carbon worth an estimated $88 million at today's carbon prices (Table 1). Urban forests also provide numerous benefits which are more challenging to put a dollar value on, such as wildlife habitat, enhanced biodiversity, and the cultural significance of mature trees[14].

Components of Saanich's urban forest

native forest
streamside tree
street tree
park tree
landscaping tree
yard tree

Natural Areas | Rural Land | Riparian Areas | Parks | Urban Trees | Foreshore
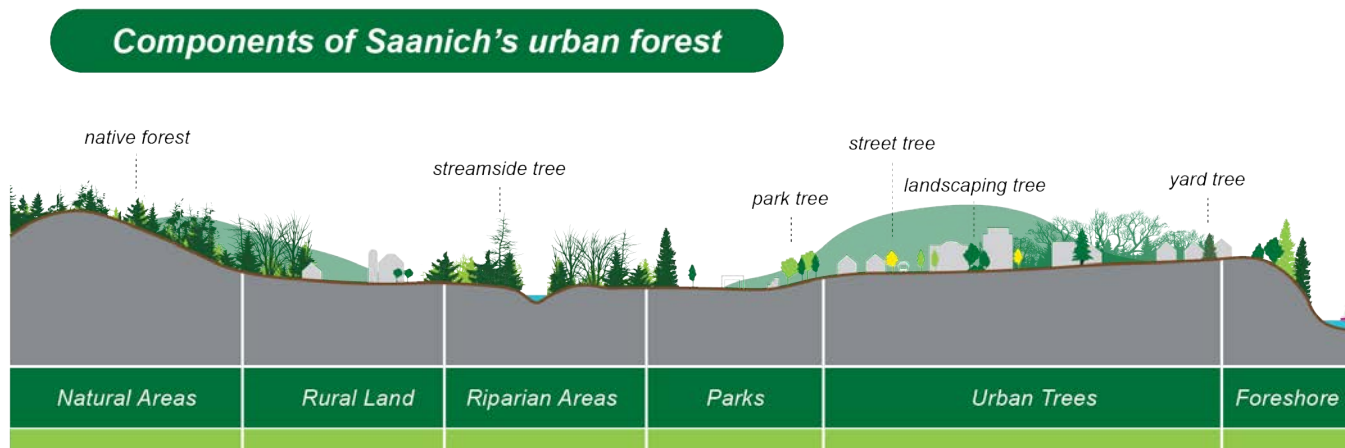
Figure 1. Components of Saanich's urban forest.

Table 1. Value of selected ecosystem services provided by Saanich's urban forest (i-Tree canopy; 2019 canopy cover)

Ecosystem service	Unit	Service total	Estimated value
Carbon sequestered annually in trees	Tonnes/year	12,402	$2,958,500 per year
Stormwater runoff avoided annually	Litres/year	1,338,893,710	$4,070,200 per year
Removal of common urban air pollutants annually:			
Carbon monoxide	Grams/year	3,749,460	$6,256,400 per year
Nitrogen dioxide	Grams/year	37,831,090	
Ozone	Grams/year	267,749,900	
Particulates (PM10)	Grams/year	79,075,150	
Fine particulates (PM2.5)	Grams/year	20,670,100	
Sulphur dioxide	Grams/year	14,517,140	
Total value – annual services			**$13,285,100 per year**
Total value – carbon storage (not an annual value)			**$88,122,400**

Figure 2. Benefits of Saanich's urban forest.

THE URBAN FOREST: SOME KEY BENEFITS

Resilience to climate change

Saanich's urban forest is vital to safeguarding the community against climate impacts. A significant concern is increasing temperatures in cities due to the urban heat island effect and more frequent heat waves in summer. On a hot summer day, shaded paved surfaces can be up to 11-25°C cooler than nearby unshaded surfaces[15]. Trees also actively cool the air through the process of evapotranspiration – the release of water vapour through leaves and needles. Evapotranspiration can lower ambient air temperatures by 1-5°C[16]. Research into the cooling efficiency of green and blue infrastructure has found that street trees, green walls and vegetated balconies provide approximately 4°C in cooling efficiency[17].

The cooling effects of greenness were correlated with lower heat-related death during BC's record-breaking June 2021 heat wave[18]. Trees also have roles in reducing the severity of storm impacts (evapotranspiration and rain capture diverts water from sewers and basements) and erosion (roots hold down slopes and interrupt overland flow). Counterintuitively, increasing tree cover can reduce domestic water usage by lowering the need for lawn and garden irrigation, helping to preserve municipal water during droughts[19]. Finally, trees actively help the fight against climate change by removing carbon dioxide from the atmosphere and sequestering carbon in their wood, roots, and the soil. Each year the urban forest offsets an estimated 2 per cent of the District's 513 kilotonnes of annual territorial greenhouse gas emissions[20], an important contribution that nonetheless underscores how much progress still needs to be made to meet the community's Climate Plan goals.

Biodiversity

Saanich's urban forest includes trees and native forest ecosystems that are unique to this region. Warm, mild forests with lots of winter rain produce huge trees that can live for centuries and shape some of the most complex habitats on Earth. The Coastal Douglas-fir forest found in Saanich is one of the smallest plant communities in British Columbia by land area. Much of its area has been lost to suburban development and agriculture. It remains home to several federally or provincially listed protected species of plants, animals, and other life. Urban trees and greenspaces play a role in connecting remnants of these biodiversity hotspots into useful habitats. Biodiversity is the linchpin of healthy, functioning ecosystems, and buffers natural systems and the municipality's infrastructure from unforeseen impacts. Read more about our community's biodiversity in the Biodiversity Conservation Strategy.

Human health and wellbeing

A well-established and growing body of research relates urban trees to public and social health. Notwithstanding the reduced mortality associated with urban cooling, tree canopies promote physical fitness by creating comfortable places for walking, cycling, and exercise[21,22]. Neighbourhood greenery decreases social isolation by encouraging outdoor activities[23,24]. People with views of trees or green landscapes recovering in hospitals from surgery heal faster than patients without these views[25]. Frequent "doses" of nature can reduce anxiety, leading a growing number of Canadian doctors to prescribe time in the urban forest as part of building mental wellness[26,27]. During public engagement, many participants indicated that the urban forest is something that contributes to their sense of wellness in the community.

NATURE IMPROVES HEALTH OUTCOMES FOR...

Healing · ADHD · Cancer · Birthweight
Diabetes · Migraines · Respiratory disease
Depression · Cardiovascular disease · Anxiety
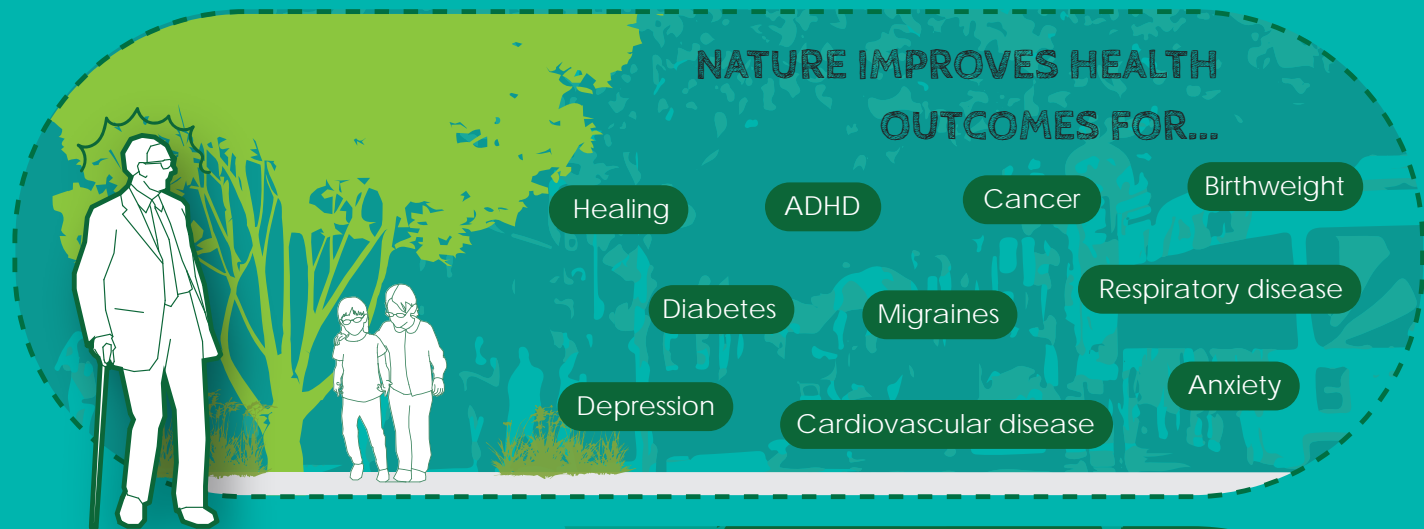
BY SUPPORTING PHYSIOLOGICAL AND PSYCHOLOGICAL STATES AND BEHAVIOURS...

Normalized blood glucose
Stronger social ties
Relaxation · Better sleep
Vitality · More excercise
Attention restoration
Immune function · Awe

THROUGH EXPOSURE TO...

Phytoncides · Nature sights and sounds
Shade
Less air pollution · Biodiversity
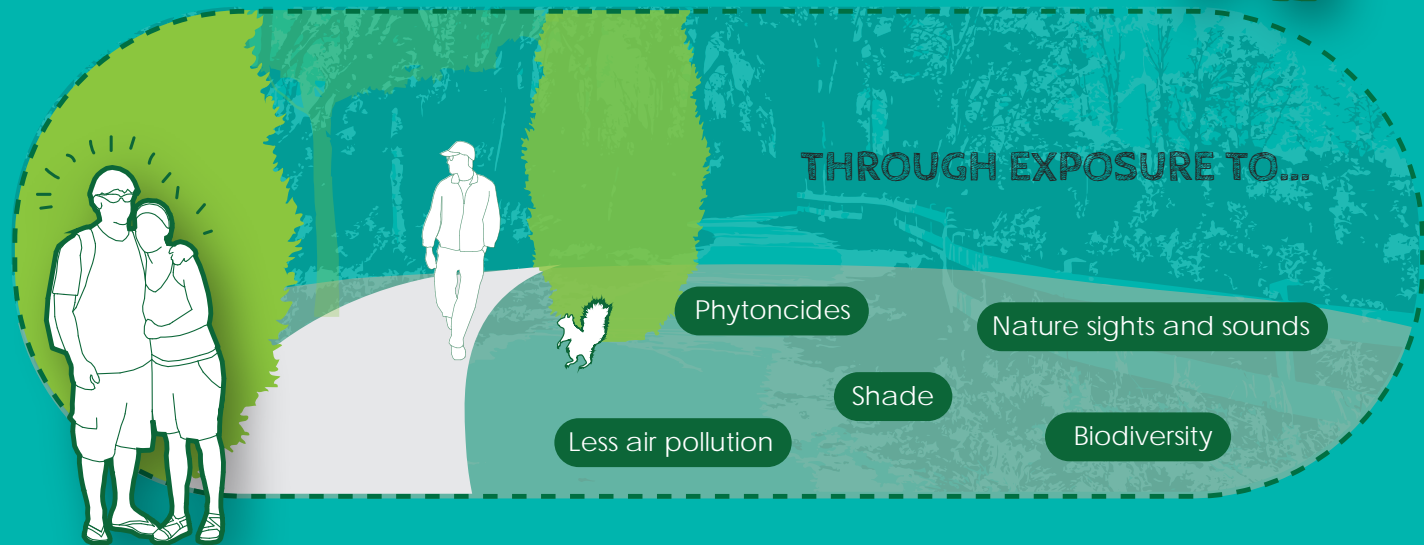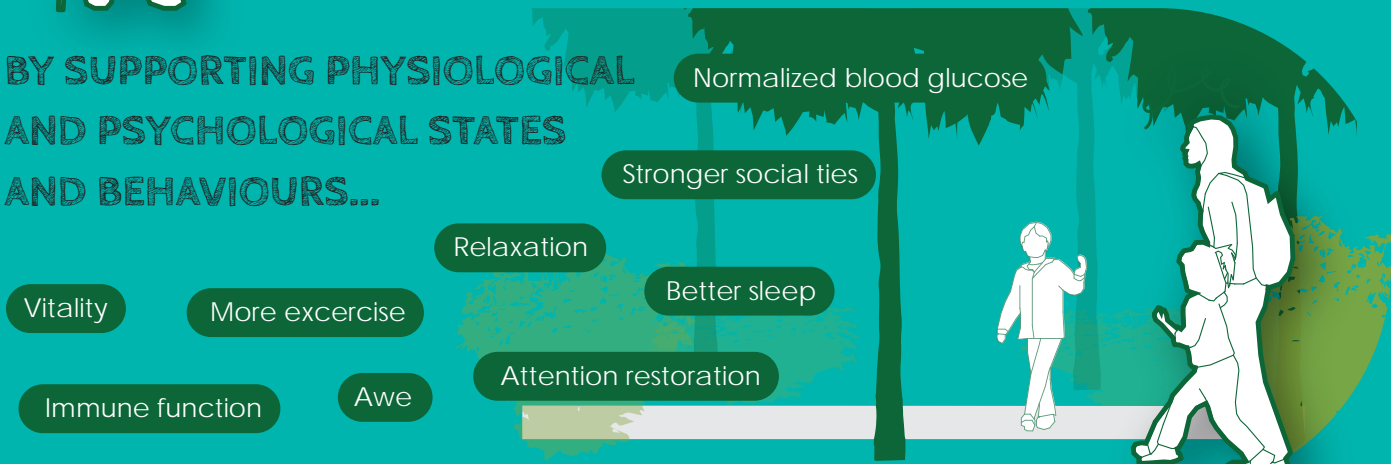
WHILE SPENDING TIME IN NATURE

Park quality
Walks in nature
Distance to park
Residential green

2.3 Origins: Saanich's urban forest history

The urban forest is the product of Saanich's geography, climate, ecology, and human history. Its story begins several thousand years ago as glacial ice retreated from the Salish Sea. The end of the ice age left a barren, rocky landscape at first without trees. Indigenous ancestors populated this landscape well before it took the form it has today. Pollen records from nearby sediment cores suggest that forests resembled their modern species mix only in the last 4,000[28] years . This means that what we think of as natural forests in the region have always been influenced by the habitation and stewardship of Indigenous Peoples.

In more recent history, Saanich's forest landscape straddles a boundary between tall coniferous forests and open oak meadows. Indigenous Peoples living around the Salish Sea played a role in keeping meadows on the landscape by using brush-clearing fires to protect them from the encroachment of coniferous trees. Oak meadows had value because of their usefulness for hunting, gathering resources, and travel. Coniferous forests also produce harvestable crops and resources, in addition to the building materials – large logs and strips of bark – that supported

HOW DOUGLAS-FIR GOT PITCH

This W̱SÁNEĆ story relates how three of Saanich's most iconic tree species came to be. It was shared with the District during the development of the Cordova Bay Local Area Plan and has been re-printed here with the permission of the W̱SÁNEĆ Leadership Council.

Pitch used to go fishing before the sun rose, and retire to the shade before it became strong. One day he was late and had just reached the beach when he melted. Other people rushed to share him. Fir [Douglas-fir] *arrived first and secured most of the pitch, which he poured over his head and body. Balsam [grand fir] obtained only a little; and by the time Arbutus arrived there was none left. Arbutus said, 'I shall have to peel my skin every year and have a good wash to keep me clean.' But just then XÁ̱EL̵S appeared and said, 'You shall all be trees and Fir shall be your boss." So now the Arbutus sheds its bark every year, and Fir has more pitch than any other tree.*

home building, canoe carving and net-making, weaving of cloth and baskets, and artistry. Other forest ecosystems, like riparian forests and wet areas with red alder, cedar, and cottonwood, as well as rocky outcrops with hardy arbutus and pine trees have their own special uses and meanings.

In the mid-19th century, settlers cleared forests for timber and agriculture. In other places coniferous forest encroached on meadows where cultural burning had previously held it back. Saanich was incorporated as a municipality in 1906. Settlers brought with them species from other parts of the world that began to replace the area's native forest ecosystems. Urban growth changed the landscape drastically, turning fields and forests into yards, homes, and parks. Efforts to plant shade trees along Shelbourne Street between Victoria and Mount Douglas are an example of early urban forest management in British Columbia. The trees, stately London planes, each commemorate the loss of a local soldier in the colonial conflicts of the Boer War (1899-1902) and the First World War (1914-1918). In 2018, the Memorial Avenue Committee organized a rededication ceremony for Shelbourne Memorial Avenue.

2.3.1 Urbanization and a growing role for urban forestry

By the middle of the 20th century, the rapidly growing population of Saanich meant that many forests and oak meadows were converted into housing and suburban developments. Tree loss has increased as lot sizes have diminished, and the standards for construction and drainage have imposed greater restrictions on trees, alongside the expansion of building sizes. In 1958, what is now known as the Parks, Recreation & Community Services Department was established to oversee the municipality's expanding network of parks and recreational amenities. Initially, its responsibilities included the management of trees on streets and publicly-owned property, and later expanded to regulating trees on private property under the District of Saanich's first tree bylaw, enacted in 1993.

Managing an increasingly urban forest has required the District to expand the scope of services it provides for trees, such as planting, pruning, watering, and inspections. To direct these efforts, the District prepared its first Urban Forest Strategy in 2010. More recently, the Council endorsed the 3:30:300 Rule for urban forestry, a "rule-of-thumb" based on urban forest research that aims to ensure residents have adequate access to trees and green spaces.

What is the 3:30:300 Rule?

In 2021, Saanich Council endorsed the 3:30:300 Rule as a guiding principle for urban forest management. The rule is based on applied research in urban forestry[29] and proposes that tree equity is achieved when every person can a) see three trees from their home b) live in a neighbourhood with 30 per cent canopy cover, and c) live within 300 m of a green space of at least one hectare in size.

Provincial legislation that was introduced in 2023 to promote the construction of much-needed housing will impact the urban forest. Although Provincial housing legislation has not changed local governments' ability to regulate trees,bylaws and local regulations need updating to ensure that the urban forest is adequately considered in the new context. The Urban Forest Strategy's Action Plan will propose recommendations for policy changes to foster positive outcomes for the urban forest alongside the new housing policies and in alignment with other District strategies and plans.

MANAGEMENT TIMELINE

Time Immemorial — Indigenous people (ancestors of W̱SÁNEĆ and ləkʷəŋən peoples) develop unique cultures and economies based on the area's land and marine resources.

4,000 years ago — Climate approximates historically recorded conditions. Forests in the area resemble today's ecosystems.

1852 — W̱SÁNEĆ representatives sign the South Saanich Douglas Treaty, believing it to be a peace treaty avoiding the threat of war. Grievances included timber harvesting by Hudson's Bay Company men near ȾEL,IȽĆE (Cordova Bay).

Bush Fire Act (BC) is the first official prohibition of "unattended fires"

1906 — Saanich becomes an incorporated municipality.

Dedication of the Shelbourne Street Memorial Avenue trees.

1958 — Saanich Parks Department is established.

The Parks Department and Recreation Department merged, forming the Saanich Parks and Recreation Department. — 1977

1993 — Saanich introduces the Tree Preservation Bylaw.

Saanich amends the Tree Preservation Bylaw.

2010 — Saanich adopts its first Urban Forest Strategy.

The Tree Protection Bylaw is introduced. — 2014

Amendments to the Tree Protection Bylaw to strengthen it and require more replacement trees. This included an amendment to establish a practice of 3:1 replacement for trees removed from municipal projects. — 2018 — Shelbourne Memorial Avenue was re-dedicated by the Memorial Avenue Committee.

Council approved a position and system to map and track the Urban Forest

2019 — The Saanich Parks and Recreation Department added a Community Services division and became the Parks, Recreation and Community Services Department.

Saanich's Climate Plan recognizes the vital role of the urban forest in climate change adaptation and mitigation for the District, and the necessity of increasing the urban forest's resilience to a changing climate. — 2020

2021 — Council endorses the 3:30:300 Rule as a principle for urban forest management.

District of Saanich and W̱SÁNEĆ Leadership Council sign the ÁTOL,NEUEL Memorandum of Understanding. — 2022 — The SENĆOŦEN name PKOLS is restored to Mt. Douglas.

The BC government approves major legislation to promote housing construction. — 2023 — Council directed the District to plant as many as 10,000 trees per year until 2034.

The Urban Forest Strategy is renewed. — 2024

UPDATES IN PROVINCIAL HOUSING POLICY: BRITISH COLUMBIA'S BILLS 44, 46, AND 47

In late 2023, the provincial government introduced legislation to promote the construction of housing throughout the province. Bill 44: Housing Statutes (Residential Development) Amendment Act made it illegal for municipalities of 5,000 people or more to use zoning bylaws to limit the development of "missing middle" housing forms, including granny flats, townhomes, duplexes, and small apartments. Bill 46: Housing Statutes (Development Financing) Amendment Act aims to increase transparency around development costs and procedures while expediting Official Community Plan-conforming projects. Bill 47: Housing Statutes (Transit-Oriented Areas) Amendment Act increases the minimum allowable density within 400 metres from all Transit-Oriented Areas in Saanich. The District of Saanich is updating its land use and development bylaws to comply with the provincial legislation and will consider how bylaws and requirements related to trees should be amended to support the urban forest and housing in the new regulatory context.

2.3.2 Turning to reconciliation in urban forestry

As it manages the urban forest day-to-day, the District of Saanich has endeavored to recognize and affirm the rights and interests of Indigenous people and work towards reconciliation in its operations and governance of these traditional lands. The recent renaming of Mount Douglas Park to its SENĆOŦEN name, PKOLS, is one example. Following close engagement, the District of Saanich and the W̱SÁNEĆ Leadership Council, released the ÁTOL,NEUEL (Respecting One Another) Memorandum of Understanding on December 3rd, 2021. This agreement sets the table for the development of a strong and fair government-to-government relationship based on respect, co-operation, and partnership. The District of Saanich is also committed to building government-to-government relationships with lək̓ʷəŋən-speaking peoples and better serving Urban Indigenous communities.

2.4 Where the Strategy fits in Saanich's Environmental Policy Framework

Saanich's draft Environmental Policy Framework provides guidance to create a coordinated approach for environmental projects, programs and policies led by Saanich. It outlines Guiding Principles and Goals to assist District staff to align environmental policies and programs to support a Sustainable and Resilient Saanich. It reinforces a strong and united culture of environmental protection and enhancement among staff in their work related to the natural environment.

The Environmental Policy Framework is consistent with the Saanich Vision in the Official Community Plan and will guide Saanich's approach to protecting and enhancing the natural environment (Figure 3). Plans, policies, and programs within each theme area, including the Urban Forest Strategy, Biodiversity Conservation Strategy and Natural Asset Management Plan operationalize the goals of the Framework and support Council's goals of Climate Action and Environmental Leadership (Council's Strategic Plan 2023-2027). This will ensure that Saanich stewards the environment, that its building typologies and infrastructure reflect Saanich's environmental and climate concerns, and that it continues to develop innovative solutions and implement best practices to reduce emissions, mitigate and adapt to the effects of climate change, and protect the environment.
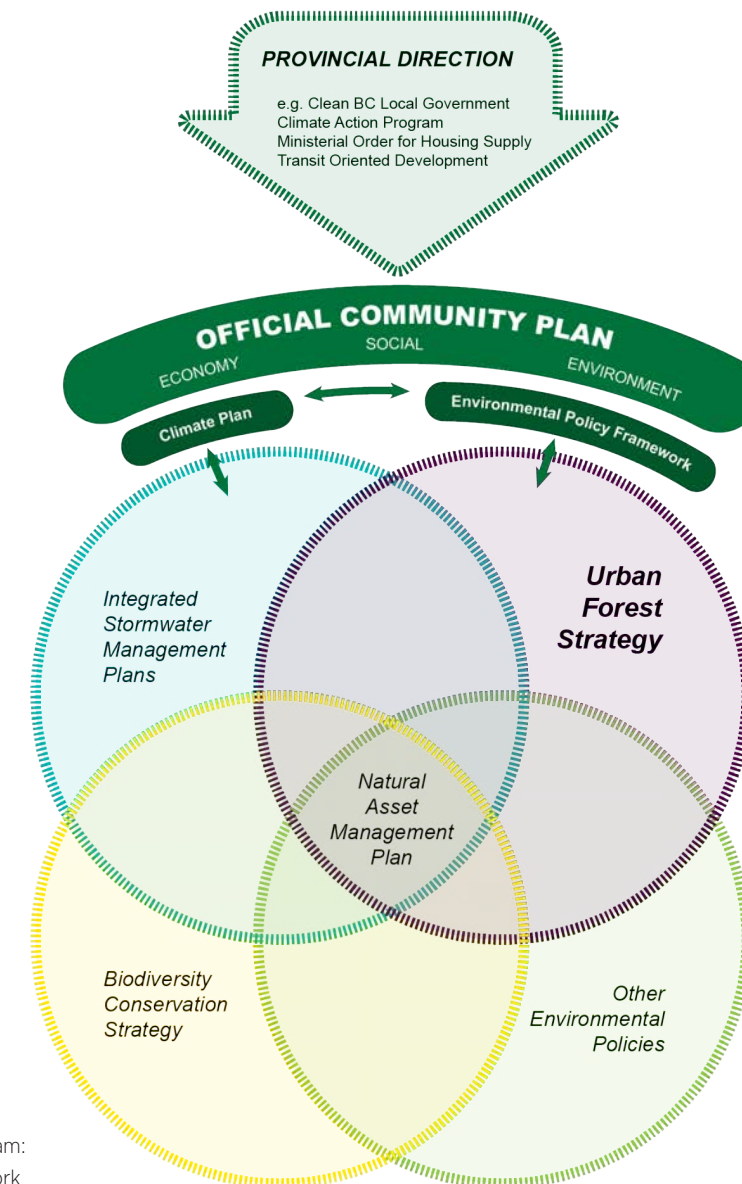
Figure 3. Conceptural diagram: Environmental Policy Framework

3 What We Have: Status and Trends

This section summarizes key findings from the State of the Urban Forest Report. This section discusses "canopy cover" as one measure of the urban forest. Canopy cover is the percentage of land area covered by trees when viewed from above (Figure 4).

3.1 Saanich's urban forest

As of 2019, 43 per cent of the District's land area – or approximately 4,500 hectares – is covered by tree canopy. This estimate is based on LiDAR and aerial photography taken in 2019. The technique employed to calculate this estimate involves mapping the canopy of individual trees within the urban forest. Saanich contains at least 742,000 trees according to this analysis. However, this figure significantly underestimates the actual number of trees, as smaller trees concealed under the upper layer of the urban forest canopy are not detected by the LiDAR analysis.

Figure 4.   Canopy cover refers to the extent of the leafy, upper part of trees in the urban forest when viewed from above.
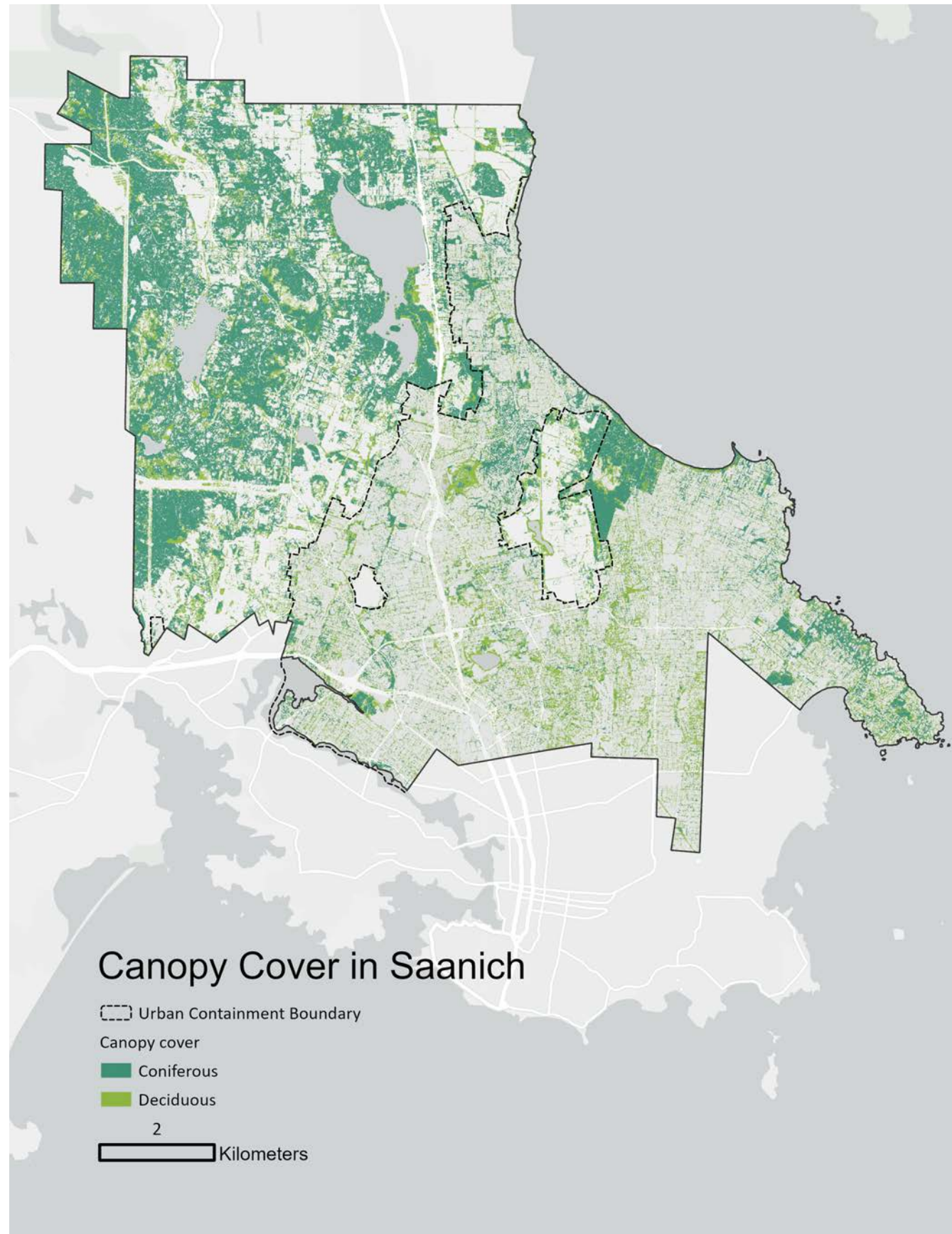
Figure 5. Canopy cover in Saanich mapped by LiDAR in 2019.

Canopy Cover in Saanich

‑ ‑ ‑ Urban Containment Boundary

Canopy cover

■ Coniferous
■ Deciduous

2
Kilometers

Estimating canopy cover

This is the first time the District of Saanich has used a LiDAR-supported method to estimate its canopy cover (Figure 5). Previous estimates of canopy cover in Saanich have ranged from 36 to 47 per cent, but used less precise methods that did not map the location of individual trees. The 2010 Urban Forest Strategy adopted the lowest of these estimates, 36 percent, as a baseline. Due to methodological differences, these earlier estimates do not align directly with the 2019 figure, complicating trend analysis for the urban forest canopy. The LiDAR method now employed represents the best practice for mapping urban forest canopy cover. This method's ability to precisely identify individual trees suggests that future enhancements in measurement techniques are unlikely to pose similar comparison challenges.

The LiDAR method captures the height of trees. This information can be compared with the canopy area of each tree, creating a profile of the urban forest's structure. Figure 6 shows how small trees (less than 10 m in height) outnumber larger trees in Saanich. Despite this, larger trees provide far more of Saanich's canopy cover than small trees. Every large tree in Saanich started life as a small seedling. With time, trees that have the capacity to grow large will do so provided they have the right environmental conditions, providing greater benefits. The challenge for Saanich is to ensure that young trees are supported throughout their lifecycle so they can become large mature trees in the urban forest.
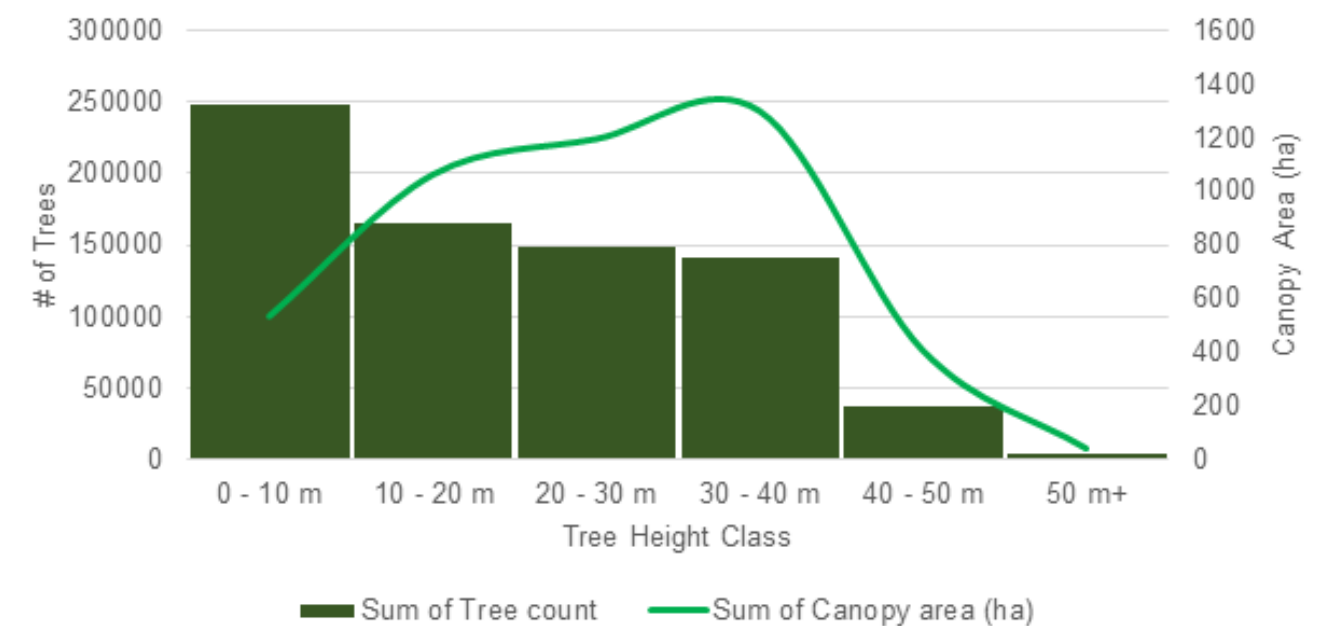
Figure 6. Comparison of number of trees and canopy area contributed by 10-metre height class.

The majority of tree species in Saanich are likely native species, given that natural areas constitute the largest portion of the District's tree canopy cover. Douglas-fir, Garry oak, western redcedar, red alder, and bigleaf maple are likely to be the most common species in Saanich's urban forest because they dominate natural areas in this region. However, species composition in urban settings exhibits a significantly greater diversity than in natural areas. The mild climate of Saanich enables the growth of a wider variety of tree species than those that occur naturally in the region. Although Saanich does not have a comprehensive tree inventory, recent records of tree planting indicate that the District's urban forest includes at least 37 different tree species.

Most commonly planted trees in Saanich

- Garry oak
- Red maple
- Persian ironwood
- Flowering dogwood
- Japanese snowbell
- Amur maple
- Ginkgo
- Douglas-fir
- Sweetgum
- Serbian spruce
- Western redcedar
- Eastern redbud
- Honey locust
- Golden raintree

3.1.1 Natural and semi-natural forests

Saanich is home to native forest ecosystems unique in Canada, including the Coastal Douglas-fir ecosystem and Garry oak meadow ecosystem. The State of the Urban Forest

Report estimates that forested natural areas contributed three-quarters of Saanich's urban forest canopy, underscoring the critical role of native forest ecosystems in maintaining Saanich as a green and unique place to live. However, forests in Saanich face various urban pressures, including the spread of invasive plant species, vandalism and unauthorized tree removals, development pressure and forest loss for infrastructure improvements, and other unsanctioned activities like trail-building and camping. These factors lead to significant variability in ecosystem services provision, biodiversity, and habitat quality in natural and semi-natural forests.

Of Saanich's land area, 3,700 hectares—or more than one-third—is covered by native forest ecosystems, but only 1 percent of the area includes "old forests," where trees may exceed 250 years in age. Most of Saanich's forests are either "mature" primarily coniferous forests that regenerated after historical land clearings in the 19th and early 20th centuries, or young forests. Young forests often consist of deciduous species such as red alder, cottonwood, and bigleaf maple, typically found in more recently disturbed areas, like riparian zones or on lands previously used for agriculture or industry.

Saanich's natural forests contain most of the municipality's tallest, largest trees. The tallest trees in Saanich reach over 55 metres in height, equivalent to an 18-storey apartment building. These towering trees thrive in the deeper soil areas of the Coastal Douglas-fir ecosystem prevalent in Saanich, aided by the region's mild climate and substantial winter rainfall. Natural forests confront significant challenges as the climate increasingly deviates from historical norms. As outlined in the State of the Urban Forest Report, LiDAR and orthoimagery detection methods show that 13,000 trees in Saanich are presenting signs of decline or dieback in their crowns. These trees are predominantly located in Rural Saanich. Native species like western redcedar, western hemlock and grand fir are widely known to be struggling with drier summers that are occurring because of climate change.

Visitors and residents of Saanich are greeted by the sight of abundant Garry oak (SENĆOŦEN: ĆEṈ¸IŁĆ) trees. While many Garry oaks grow in urban settings, a portion of these trees persist in the unique oak savannah ecosystems native to the area. Historically, Garry oak meadows, a distinct ecosystem where Garry oak trees may or may not be present, were maintained by frequent, low-intensity fires—used as a management tool by Indigenous firekeepers. These fires eliminated competing vegetation under the oak canopies, fostering a rare and biodiverse habitat of fire-adapted oaks surrounded by a rich array of forbs, grasses, and wildflowers such as camas.

Garry oak ecosystems coincide with Vancouver Island's most developable lands, leading to urban development as the main cause for the loss of 95 per cent of this unique and endangered ecosystem in Canada[30]. The suppression of fire, the spread of invasive species, and habitat fragmentation have threatened the integrity of remnant ecosystems. Within Saanich, there are several remnant Garry oak ecosystems, some of which Saanich Parks and community partners are actively conserving and restoring.

3.2 Criteria for protection and retention of exceptional trees

Exceptional trees hold cultural significance, support biodiversity, and provide significant ecosystem services that are difficult to replace. They also include over 350 trees designated as significant trees under Saanich's Tree Protection Bylaw, which are subject to a higher standard of protection. In addition to significant trees, Saanich's largest trees can be considered exceptional because they provide greater ecosystem services compared to small trees. Approximately 10 per cent of Saanich's overstorey trees have individual canopy areas exceeding 100 m2 – equivalent to a tree with a crown spread from limb to limb of over 11 m. These trees provide 25 per cent of Saanich's total canopy area. The scarcity of large trees, especially within the Urban Containment Boundary, underscores the importance of their retention and preservation.

In urban areas, large trees provide important links between habitat hubs identified by Saanich's Biodiversity Conservation Strategy. The distribution of large trees within the Urban Containment Boundary varies significantly among neighbourhoods. Cadboro Bay, Royal Oak, Cordova Bay, and Quadra are home to a higher number of large trees than neighbourhoods like Tillicum, Carey, Shelbourne, and Saanich Core, where large trees are scarce.

For municipal projects, and as guidance for utility projects, Saanich provides further criteria for defining exceptional trees that must be prioritized for protection and retention on public lands. These criteria include:

1. Culturally significant trees: trees historically native to the area

2. Biodiversity value: wildlife trees when safe to retain

3. Large canopy value: trees with individual canopy areas exceeding 100 m2 or the potential to exceed at maturity – equivalent to a tree with a crown spread from limb to limb of over 11 m.

The Large Tree Argument

The large tree "argument" makes the case for planting and preserving trees that will be large at maturity. Originating from research conducted by the US Forest Service, the argument acknowledges that larger trees significantly amplify the provision of ecosystem services compared to their smaller counterparts. For example, it would take four trees, each with a canopy spread of 5 meters, to replicate the services provided by a single tree with a 10-meter canopy. Beyond size, large trees offer unique ecosystem benefits, particularly in terms of habitat and biodiversity, that smaller trees cannot match. Given their significant contributions, large trees are indispensable components of the urban forest, warranting thoughtful planning and protection to maximize their abundance and life expectancy.
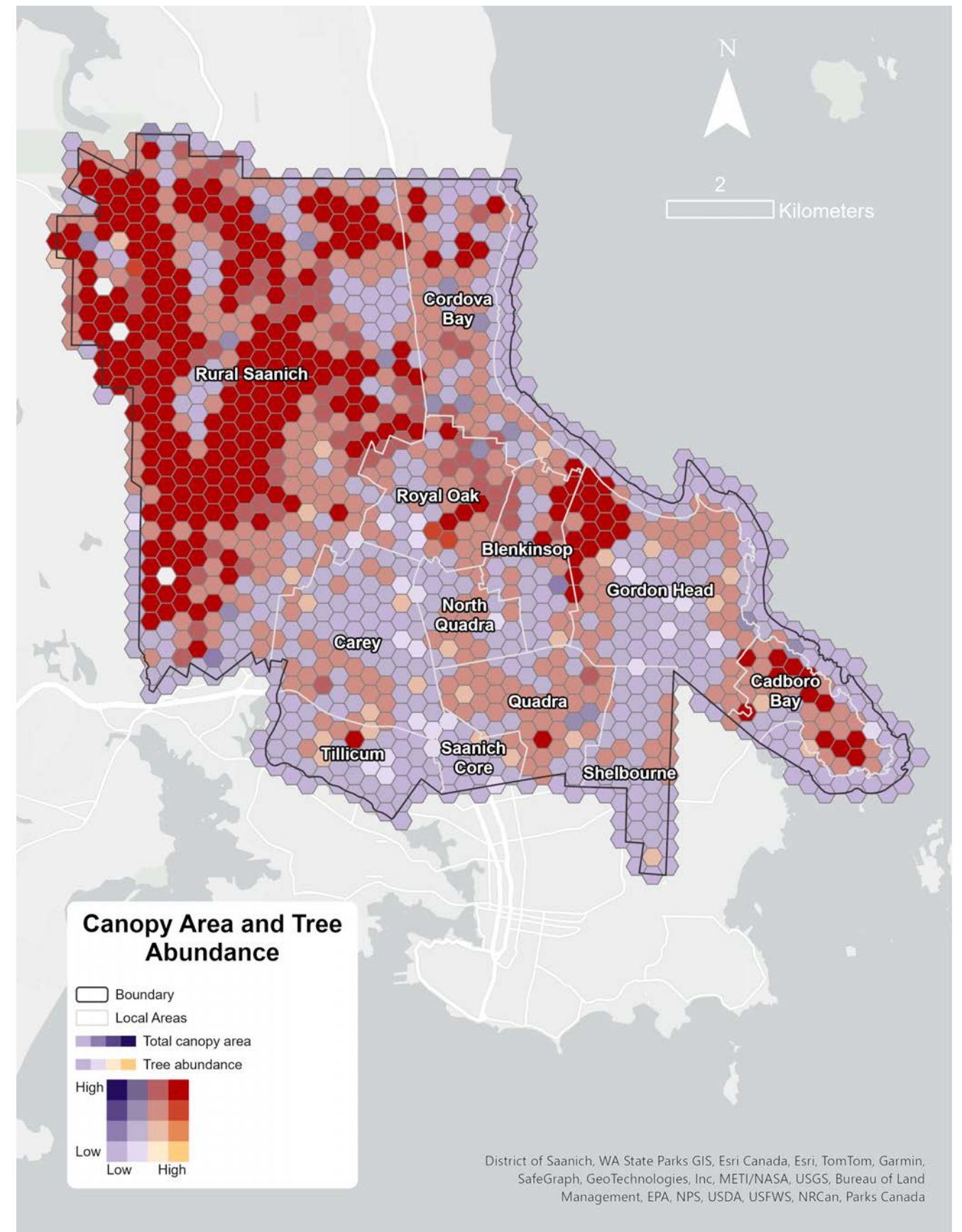
Figure 7. Saanich's largest trees. Hexagons shaded in light purple represent areas with small average tree size and low numbers of trees, while hexagons shaded in red have a high number of large trees.
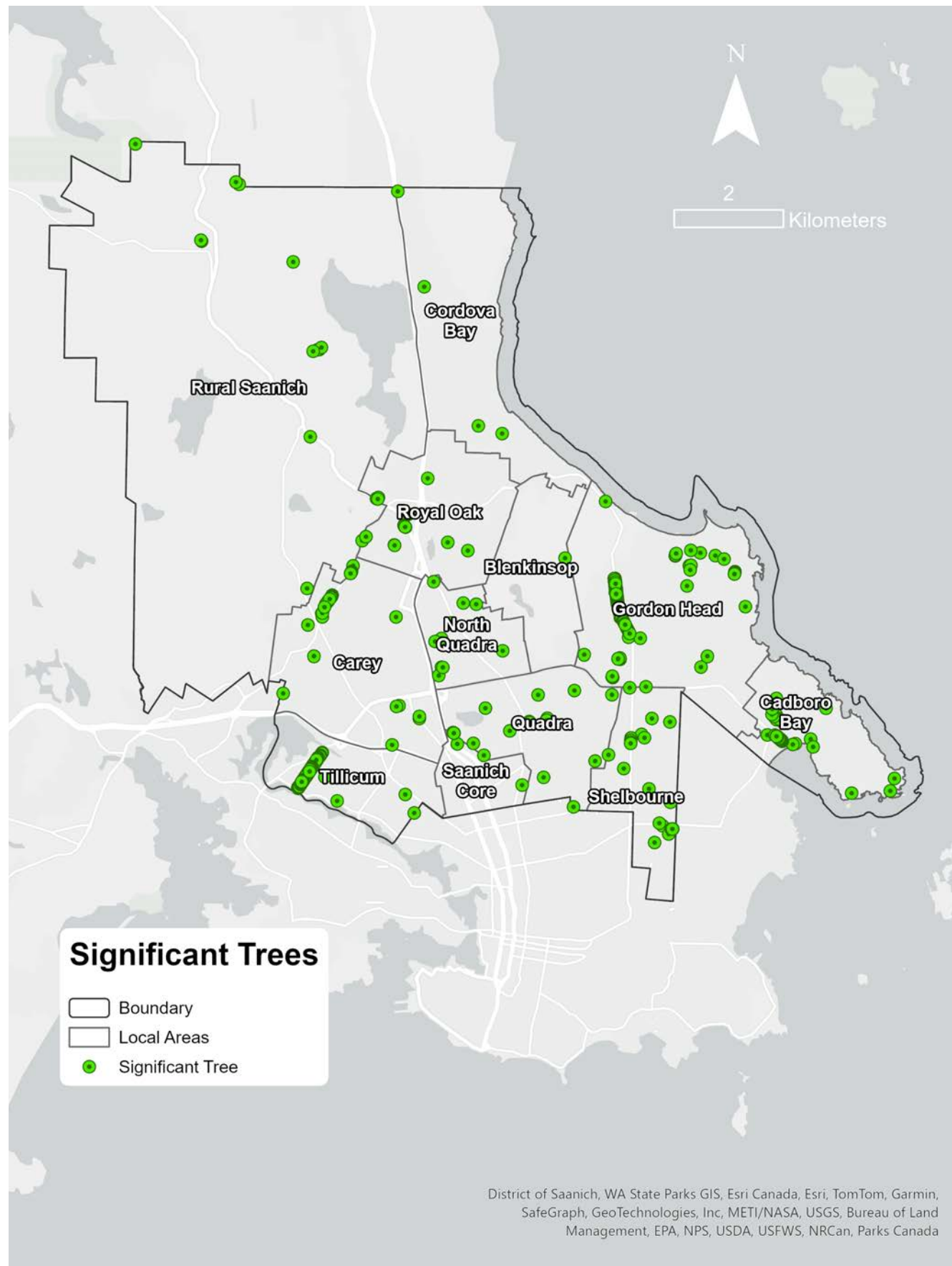
3.3 The urban forest in each Local Area

Canopy cover extent is a useful metric for describing urban forest extent at different geographic scales such as property, neighbourhood, or municipal boundary. Saanich, with its mosaic of distinct neighbourhoods, contains a blend of land use patterns, environmental conditions, and other local variables that influence canopy cover. Most people live and work within the Urban Containment Boundary, where canopy cover was 31 per cent in 2019.

Canopy cover varies widely between neighbourhoods, from just 17 per cent in Saanich Core up to 56 per cent in Rural Saanich, outside the Urban Containment Boundary. Among urban neighbourhoods, Cadboro Bay has the highest tree canopy cover at 47 per cent canopy cover. The variation in tree canopy within the Urban Containment Boundary is primarily attributed to land use patterns; areas with industrial, commercial, and high-density residential developments often feature extensive paved or impervious surfaces, which limit tree planting and growth (Figure 5).

Presently, no neighbourhood within the Urban Containment Boundary is currently achieving the 3:30:300 Rule, though some are much closer than others. Most neighbourhoods come close to achieving at least three trees within view of every home[31], with only 210 homes in the District identified as not meeting this metric. Most homes that had fewer trees than the target were located in Shelbourne, Saanich Core and Cordova Bay. Four neighbourhoods, Carey, Saanich Core, Shelbourne, and Tillicum have less than 30 percent canopy cover. No neighbourhood provides a public greenspace of at least one hectare in size within 300 metres of all homes (Figure 5).

ḰEḰEYIȽĆ
(Arbutus)

A broadleaved evergreen tree with colourful red, flaky outer bark and inner bark that is often bright green, carrying dark, shiny green leaves. ḰEḰEYIȽĆ tolerates dry, thin soils and salt spray, making it commonly found on rocky sites near the coast. W̱SÁNEĆ history relates that a tree rooted on LÁU,WELNEW (place of refuge) anchored canoes during the great flood caused by XÁLS.

PRONUNCIATION

Ḱ   is like the "c" in "call" but with the lips rounded

E   is like the "a" and "o" in "above"

Y   is the same sound as the beginning of "yes"

I   is like "i" in "machine"

Ƚ   is an unfamiliar sound, made by placing the tongue in the position for T and blowing air

Ć   is like "ch"

Say it like kuh-kuy-eelth-ch

Figure 8. Significant Trees listed in Schedule B of Saanich's Tree Protection Bylaw

DISTRICT AVERAGE OR DISTRICT TOTAL	LAND USE (RURAL VILLAGE, RURAL AREAS, PRIMARY GROWTH AREA, PARK, NEIGHBOURHOOD HUB, NEIGHBOURHOOD, KNOWLEDGE CENTRE, INSTITUTIONAL, INDUSTRIAL LANDS)	POPULATION DENSITY	SAANICH PARKS (HECTARES)	# HOMES WITH LESS THAN 3 TREES WITHIN 25M	CANOPY COVER	# OF HOMES FURTHER THAN 300M FROM GREENSPACE OF AT LEAST 1 HA
District Average/Total		1,098 people/sq. km	809	210	43%	17,586
BLENKINSOP		273	62	0	32%	101
CADBORO BAY		1,120	30	1	47%	809
CAREY		2,243	96	9	24%	829
CORDOVA BAY		964	35	34	35%	1020
GORDON HEAD		2,050	191	3	36%	4,283
NORTH QUADRA		2,702	32	0	27%	743
QUADRA		2,114	120	12	34%	1,445
ROYAL OAK		1,553	77	20	38%	315
RURAL SAANICH		111	97	0	56%	1,129
SAANICH CORE		3,381	3	33	17%	1,919
SHELBOURNE		3,090	24	94	25%	3,105
TILLICUM		2,485	43	4	22%	1,888

Figure 9. Facts about Saanich's neighbourhoods and how they perform on the 3:30:300 Rule.
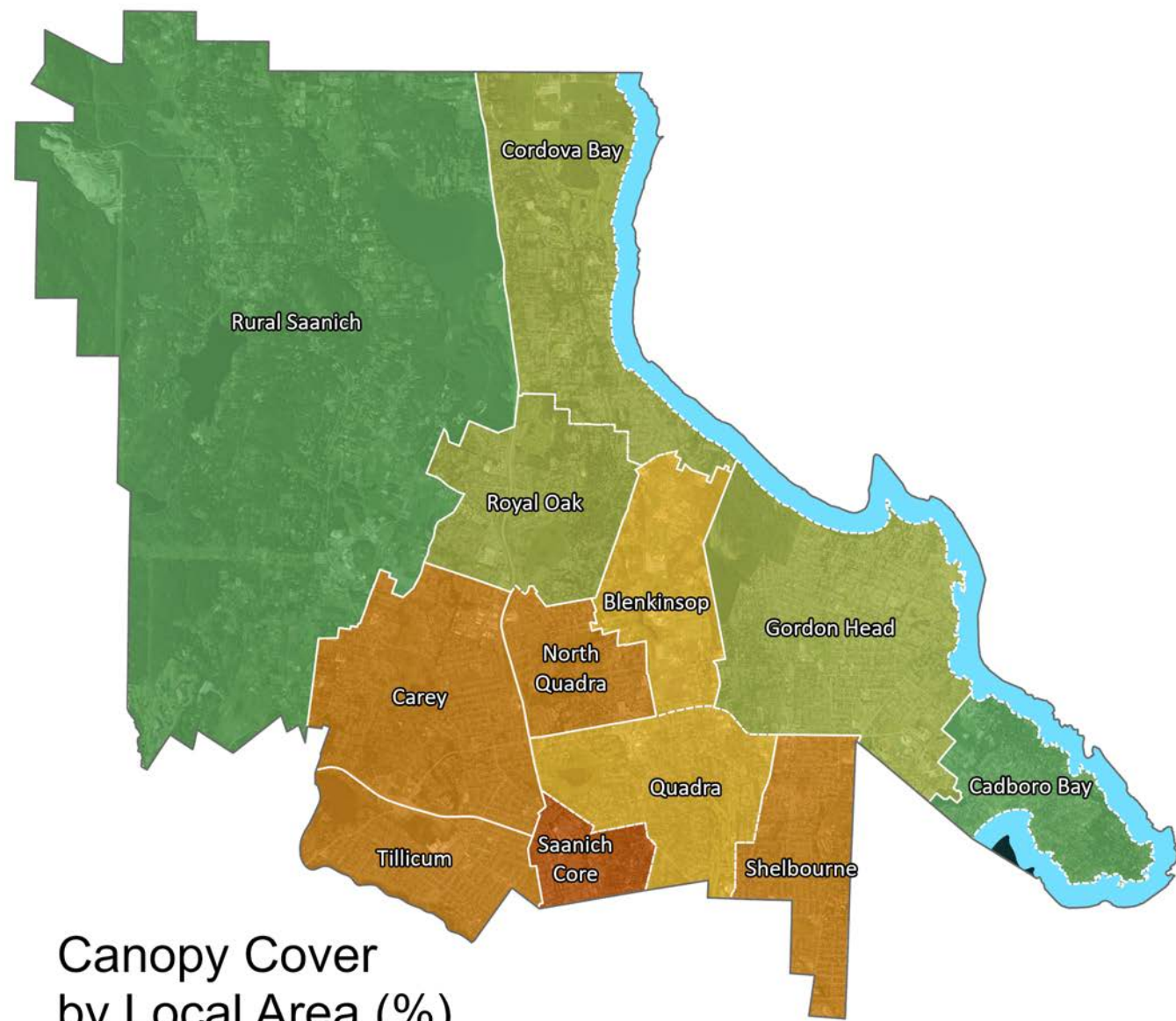
Canopy Cover by Local Area (%)

Legend:
- < 20
- 20 - 30
- 30 - 35
- 35 - 45
- 45 - 56
- ▢ Boundary
- ▬ Ocean

Map labels:
- Rural Saanich
- Cordova Bay
- Royal Oak
- Blenkinsop
- Gordon Head
- North Quadra
- Carey
- Quadra
- Cadboro Bay
- Tillicum
- Saanich Core
- Shelbourne

2 Kilometers
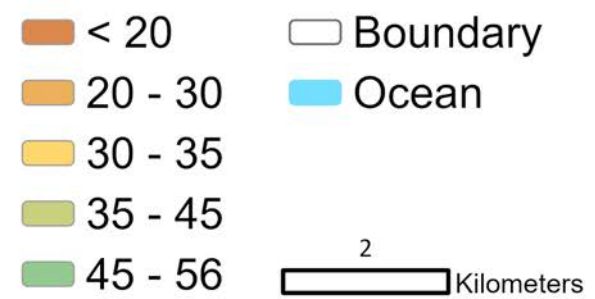
Figure 10. Canopy cover in each Local Area (neighbourhood).

3.4 Tree Equity

The uneven distribution of Saanich's urban forest canopy has consequences for the health and well-being of residents. The concept of tree equity is based on social-interest research in urban forestry that has shown socially vulnerable populations tend to have less access to greenspace and its associated benefits like better mental health and higher environmental quality. A Tree Equity Score is a method of assessing the distributional equity of urban tree canopy in comparison to where the population is most in need of its benefits. Areas with low urban forest canopy cover are predisposed to climate impacts like extreme heat. These areas frequently overlap with the residences of people who are especially vulnerable to climate impacts, such as the elderly and those with low incomes.

Tree Equity Scores have been calculated for each census dissemination area within Saanich. Scores within Saanich range between the mid-50s and 100. A score of 100 indicates that tree equity has been achieved within a dissemination area based on its current canopy, target canopy cover based on land use, and sociodemographic indicators. Lower scores indicate relative inequity. Two-thirds of Saanich's dissemination areas have tree equity scores of 89 or more. Areas with lower Tree Equity Scores occur in more urbanized areas like Uptown, Shelbourne, and Tillicum, as well as areas with a legacy of less tree planting like suburban Gordon Head and Carey (Figure 10).

Neighbourhoods with the lowest Tree Equity Scores in Saanich also tend to have higher populations of small trees relative to large trees. In these neighbourhoods, high amounts of impervious surface, limited soil volumes and proximity to infrastructure can shorten tree size and life expectancy, and result in higher relative costs for tree care, maintenance, and replacement.

What is a Tree Equity Score?

The Tree Equity Score is a metric developed by American Forests, a non-profit organization based in the United States, to measure how equitably a municipality's tree canopy is distributed. The score is calculated from two inputs: canopy gaps (i.e., areas that lack tree canopy) and a priority index that indicates areas with the highest need for trees based on urban heat and sociodemographic indicators. The priority index for Saanich considers the following factors:

• Age – the proportion of children and seniors from the 2021 Census of Canada

• Low income percent – the proportion of people with low-income status from the 2021 Census of Canada.

• Temperature – the land surface temperature as detected on June 30, 2021 by the NASA/US Geological Survey Landsat Program.

• Unemployment – the rate of unemployment from the 2021 Census of Canada.

• Racialized people – the proportion of people who self-reported visible minority status on the 2021 Census of Canada.
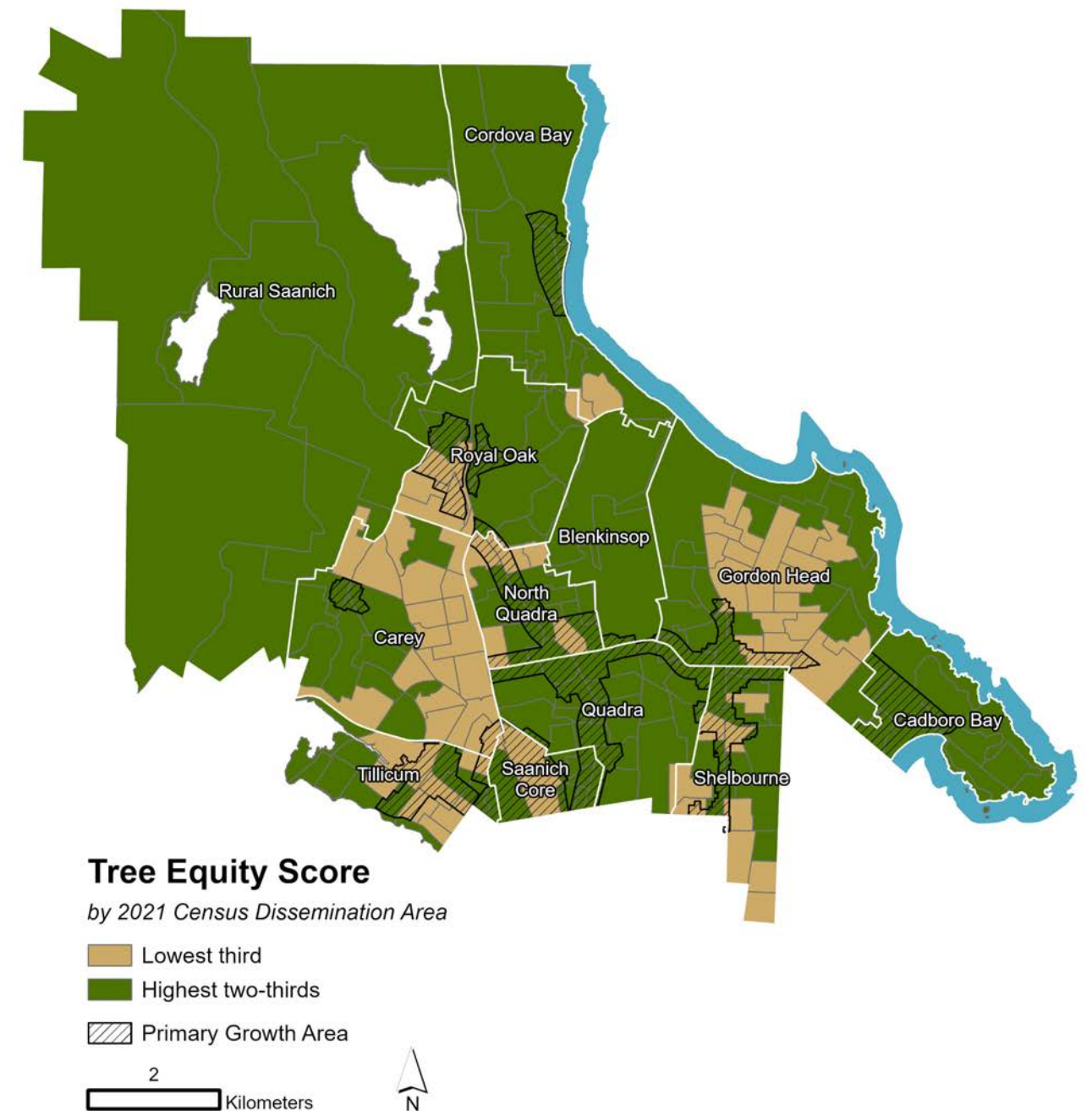
Figure 11. Tree Equity Scores in Saanich.

3.5 The urban forest in OCP Future Land Uses

Saanich's Official Community Plan identifies new Future Land Uses to guide development. These cross existing Local Area boundaries and reflect where and how intensification will occur within the Urban Containment Boundary. The new categories in the 2024 Official Community Plan are:

PRIMARY GROWTH AREAS

Within the Urban Containment Boundary, these areas are where the District will allow higher density development and other land use intensification, for the purpose of helping create more complete, walkable communities in every Local Area. Primary Growth Areas are further subdivided into Centres, Villages, and Primary Corridors to reflect the unique setting and preferred character of development in different parts of Saanich.

NEIGHBOURHOODS

Within the Urban Containment Boundary, these areas are where the District will allow gentler land use intensification to support more complete communities. Neighbourhoods provide a range of mostly ground-oriented housing options. Within Neighbourhoods there can also be identified Neighbourhood Hubs and Secondary Corridors which allow for additional housing forms and may have local-serving commercial uses. Alongside Neighbourhoods, neighbourhood hubs may be designated to reflect the intention to allow community and small-scale commercial uses. Only one neighbourhood hub is currently designated (Figure 11).

Land use policies guiding future development strongly influence outcomes for the urban forest. In general, canopy cover decreases with increasing population density. As of 2019, designated Primary Growth Areas, which are generally more urbanized and populated than other areas, had 25 per cent canopy cover

– lower than the 30 per cent recommended by 3:30:300. The Neighbourhoods land uses average 31 per cent canopy cover. Other land uses within the Urban Containment Boundary (excluding Primary Growth Areas and Neighbourhoods) average 42 per cent canopy cover, which mainly reflects high canopy cover in some parks and on some large Institutional properties like the University of Victoria. Areas outside the Urban Containment Boundary have the highest canopy cover (53 per cent), mainly in natural forests (Table 2).

Table 2. Comparison of land area and canopy cover for major land uses and roadways.

Future Land Use	Land area (ha)	Canopy area (ha)	Canopy Cover
Primary Growth Area	934	227	24%
Neighbourhoods	2,983	915	31%
Other land use in UCB	969	404	42%
Outside UCB	5,597	2,956	53%
Roadways*	1,269	358	28%

*Roadway area is included in land uses above

Although roads are not an Official Community Plan land use, a substantial portion of Saanich — over 10 per cent — is occupied by roadways. Within the Urban Containment Boundary, roadways form a large proportion of the area of each Official Community Plan land use. This makes roads an important land use to consider when assessing the future canopy cover potential in Primary Growth Areas and Neighbourhood areas. Canopy cover over roadways in Saanich currently averages 28 per cent District-wide and averages just 23 per cent when only roads within the Urban Containment Boundary are considered. While roadways can be difficult environments for trees, they are also key opportunities for street tree planting, especially as Saanich densifies and upgrades its street frontages.

Primary Growth Area
Neighbourhood
Neighbourhood Hub
Tree Canopy (2019)
Urban Containment Boundary
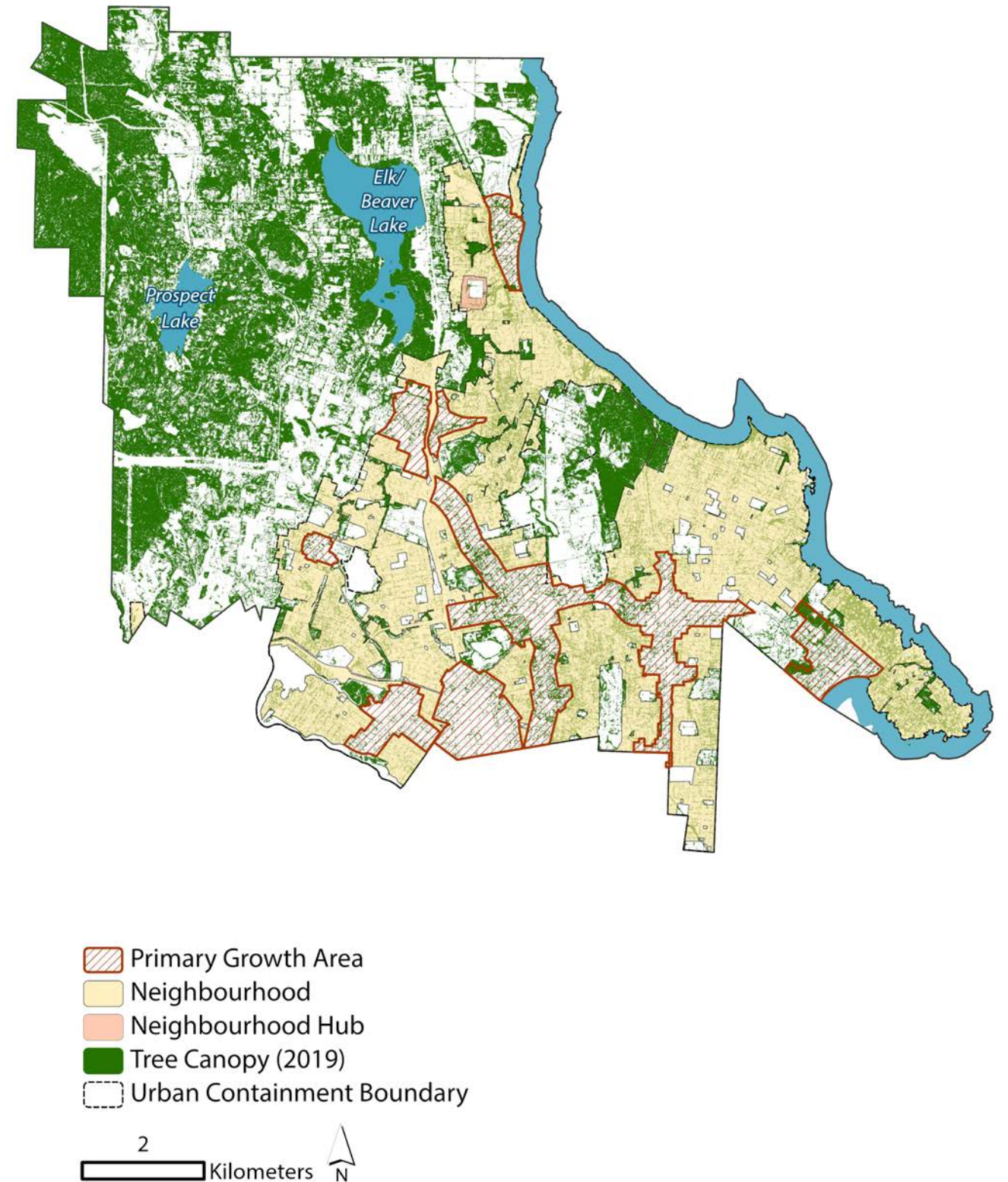
Figure 12. Saanich's 2019 canopy cover and major Future Land Uses.

3.6 Who is responsible for the urban forest?

Many organizations and people are responsible for the day-to-day management of Saanich's urban forest. The District of Saanich is responsible for just under one-fifth of the total urban forest canopy – the portion on District-owned property – four-fifths of the urban forest grows on land managed by others, including private property and lands within regional parks operated by the Capital Regional District.

The District of Saanich focuses its management on the estimated 205,000 trees it is directly responsible for. This includes 116,800 trees growing on the public boulevard adjacent to roadways (8 per cent of Saanich's total urban forest canopy) and over 79,800 in District of Saanich Parks (10 per cent of the urban forest canopy), as well as another 8,400 trees that grow elsewhere on District-owned property (1 per cent of the urban forest canopy). These numbers are based on the canopy detection prepared for the Urban Forest Strategy, not on a survey of individual trees, and are underestimates of the true number of trees on District property. The District of Saanich is preparing an inventory of young trees (2024), planted in 2018 until present, on public property.

This digital record is very important for managing levels of service, overseeing operations, public safety, monitoring tree health, and providing a consistent standard of care for publicly owned urban forest assets.

Property owners own trees on their land and have rights over their care. However, the District of Saanich can set conditions for when and how trees can be removed, pruned or damaged on private property through its Tree Protection Bylaw. This makes the urban forest the collective responsibility of residents as well as the District of Saanich, who each play roles in its ongoing maintenance, care and management.

Roadways are expected to become much more important for providing tree canopy cover as densification occurs. The impact of intensification is frequently a shift of trees from private to public property, as trees on private property are removed to accommodate development and are replaced by street and park trees maintained by local government. This will mean the District of Saanich takes on more responsibility for the urban forest relative to private property owners as growth occurs. Ensuring the Urban Forestry team and other Saanich departments have the resources they need to support ongoing urban forest management is a critical part of implementing the Urban Forest Strategy.
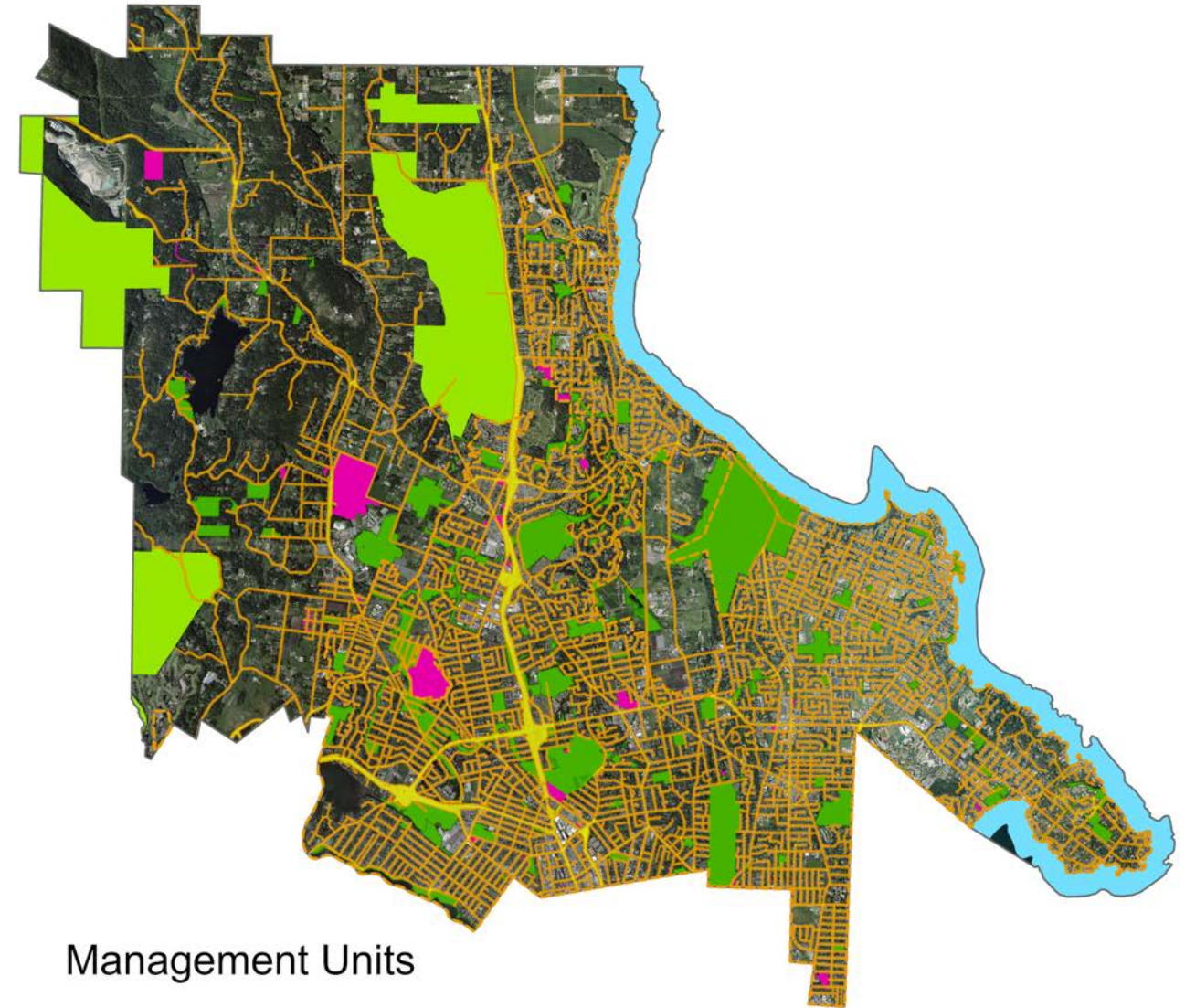
Management Units

- ■ Saanich Parks
- ■ Regional Parks
- ■ Road Allowance
- ■ Other District-owned Property
- ▢ Boundary
- ■ Ocean
- ⊂⊃ Urban Containment Boundary

2 Kilometers

Figure 13. District of Saanich directly influences the urban forest in Saanich Parks, along roadways, and on other District-owned property, and indirectly influences the urban forest elsewhere.

4 What We Do: Saanich's Urban Forest Program

The District of Saanich has a dedicated Urban Forestry, Natural Areas, and Community Stewardship section within the Parks, Recreation & Community Services Department that looks after trees and forests primarily on public property, while the Community Development and Business Services section oversees the Tree Protection Bylaw and permits, influencing the urban forest on public as well as private property. Other units that frequently interact with trees and urban forestry include Parks' Irrigation team, Planning, Engineering, Legislative & Protective Services, Information Technology, and Corporate Services.

4.1 Asset management

Trees in Saanich form part of its overall asset portfolio, just like drains and pipes, sidewalks, playgrounds, and buildings. As such the urban forest is included in the scope of the Asset Management Program, and is part of the natural asset type within the Asset Management Strategy. Asset management best practices include assigning values, timelines and costs to the installation, upkeep and replacement of infrastructure over time. A commitment to a standard of maintenance or service is called a level of service.

The goal of asset management, including natural asset management, is sustainable service delivery. This involves balancing levels of service, risk and costs. Similar to engineered assets, natural assets enable the provision of municipal services, such as Parks services and stormwater management services. Unlike engineered assets, natural assets like trees typically also provide one or more co-benefits that enhance the liveability and resilience of the community, such as air purification, carbon sequestration, temperature regulation and many

others. Together, the municipal services and co-benefits enabled by natural assets are known as *ecosystem services*.

The District of Saanich acknowledges that the terms "asset management," "natural asset management" and "ecosystem services" are rooted in Western economic and science perspectives and that more work is needed to understand and integrate Indigenous ways of knowing in planning and managing Saanich's natural assets. Asset valuation focuses on the utility value of trees and does not capture their intangible, cultural, or intrinsic values.. Although asset management does not adequately capture all values, the District of Saanich is seeking to develop a natural asset inventory[32] and management plan as a means to value and manage natural assets in the same way it does its engineered assets. The District ultimately aims to ensure effective natural asset management in order to provide cost-effective and reliable delivery of municipal services, support for climate change adaptation and mitigation, and enhancement of biodiversity and urban forest canopy cover.

A key element of Saanich's natural asset management planning approach is that it is integrated with other Saanich initiatives, including the OCP, Climate Plan, and the updated Urban Forest Strategy. While this UFS document does not include the risks and costs with a "desired Level of Service" for Council to make a decision, this work will be incorporated into Saanich's Asset Management Plan.

Natural asset inventory

Saanich is currently developing a preliminary inventory of its natural assets. These assets have been organized into a hierarchy based on how they are managed (Figure 14). The

hierarchy is comprised of seven main asset groups, some of which are further divided into sub-groups of assets. Saanich's asset hierarchy is depicted in the figure below which includes sub-groupings for the urban forest.

Saanich's urban forest includes the following asset sub-groupings:

NATURAL FOREST

Natural forests include trees growing in natural or naturalized ecosystems on public or private property. Natural forests provide important ecosystem services, including for biodiversity, that are not fully replaceable by individual trees. Trees in natural forests are not typically maintained individually like urban trees, although in Saanich Parks and other District-owned properties the District of Saanich will manage tree risk as necessary along trails or forest stand edges. Ecological restoration also occurs in natural forests, which may involve invasive species removal, native species planting, habitat feature installation, and access control. Wildfire risk can sometimes be managed in natural forests through fuel management activities.

INDIVIDUAL TREES

Individual trees represent trees growing primarily in urban contexts distinct from natural ecosystems. They include public street trees, urban park trees, and trees at District of Saanich facilities – typically planted and managed by the District of Saanich. Also represented are urban trees in other settings, including on private property.

Most of the District's urban forest management today is initiated primarily in response to public calls for service and incidental field observations by staff. This is called a "reactive" framework for urban forest management because it relies on reporting or complaints to trigger management. Scheduled maintenance does take place during the first five years of a planted tree's life in Saanich, when the tree requires watering, maintenance and other supports. Best practices for asset management recommend defined service levels for proactive maintenance throughout the asset life cycle. Supporting the Urban Forestry team to transition towards more proactive management will require advancing the District's work on the tree inventory to record tree condition, species, and work history for every planted tree on District-owned property.

Figure 14. Saanich's natural asset hierarchy includes the urban forest.

The District provides the following services for trees on its property:

Service	Asset class
Young tree watering (to age 5)	Individual trees
Young tree structural pruning (to age 5)	Individual trees
Mulching (at time of planting by demand)	Individual trees Natural forests (restoration areas only)
Staking or protective cages (at time of planting)	Individual trees Natural forests (restoration areas only)
Supplemental watering	High priority individual trees only
Pruning (reactive)	As reported
Integrated Pest Management (reactive)	As reported

4.2 Tree planting

The District plants over four hundred caliper trees each year in landscaped parks and 2,500 smaller trees and seedlings in natural area parks. The District also requires replacement tree planting whenever a protected tree is removed. There are four programs to plant trees currently:

- Partnership Tree Planting. This program allows homeowners the opportunity to request a new street tree on the public boulevard in front of their property for free so long as they commit to water it for a period of five years after planting, adding 50-75 trees per year to Saanich's streets.

- Boulevard Tree Planting. The District plants street trees on boulevards and also replaces sick and dead trees. About 175 trees per year are planted through this program, most of which are replacement trees for municipal projects as well as replacements for dead or dying trees.

- Park Tree Planting. The District plants approximately 175 trees per year in landscaped areas of Saanich Parks

- Natural Areas Restoration. Trees planted in natural area parks are typically native species. Approximately 2,500 trees and seedlings are planted per year.

Tree planting on public land is challenged by limited availability of planting sites. Suitable locations for trees are limited by conflicts with overhead and underground infrastructure, reserved space for playgrounds, sports fields, parking, and pavement. Saanich Council committed to planting three new trees for each tree removed from District-owned property for Saanich-led projects. This has quickly filled easy-to-plant locations, with few spaces remaining.

4.3 Policies and Urban Forest Planning

The activities of each section in the Parks, Recreation & Community Services Department, other municipal departments, and members of the public with respect to the urban forest are influenced and/or directed by bylaws, plans and policies. These documents include the Tree Protection Bylaw, the Official Community Plan and Development Permit Areas, Subdivision and Zoning Bylaws, Climate Plan, and other documents.

Figure 15 describes how some of these policies intersect with land uses and ownership in Saanich to shape the urban forest. Additional detail on relevant policies is provided in the State of the Urban Forest Report.
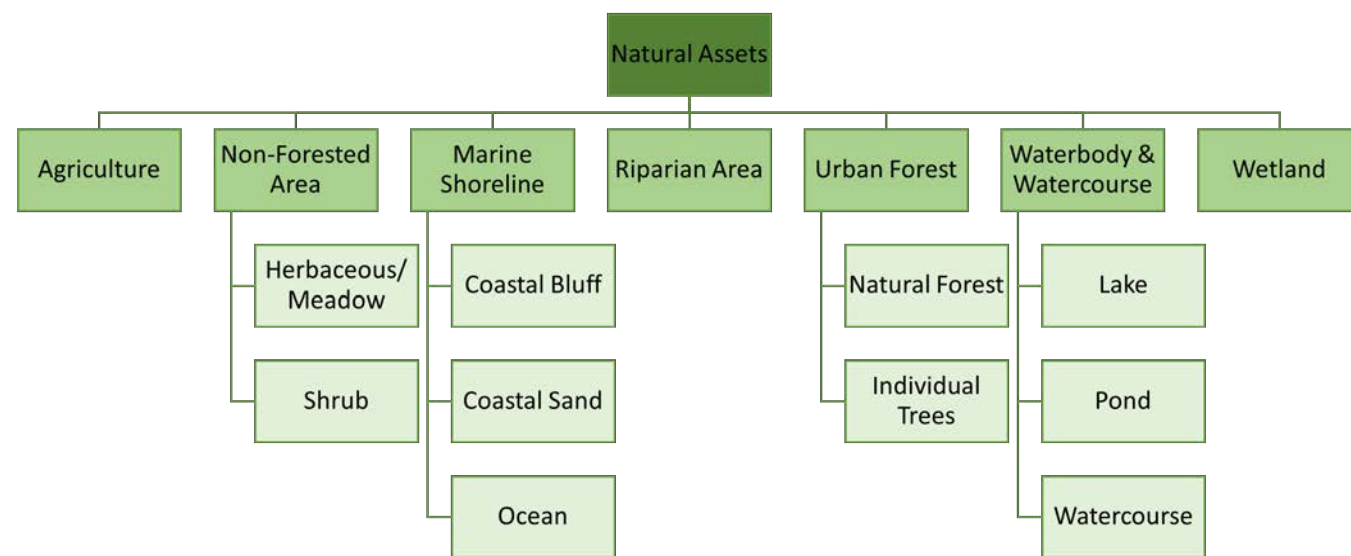
Trees in Saanich's Policies

Public | Private

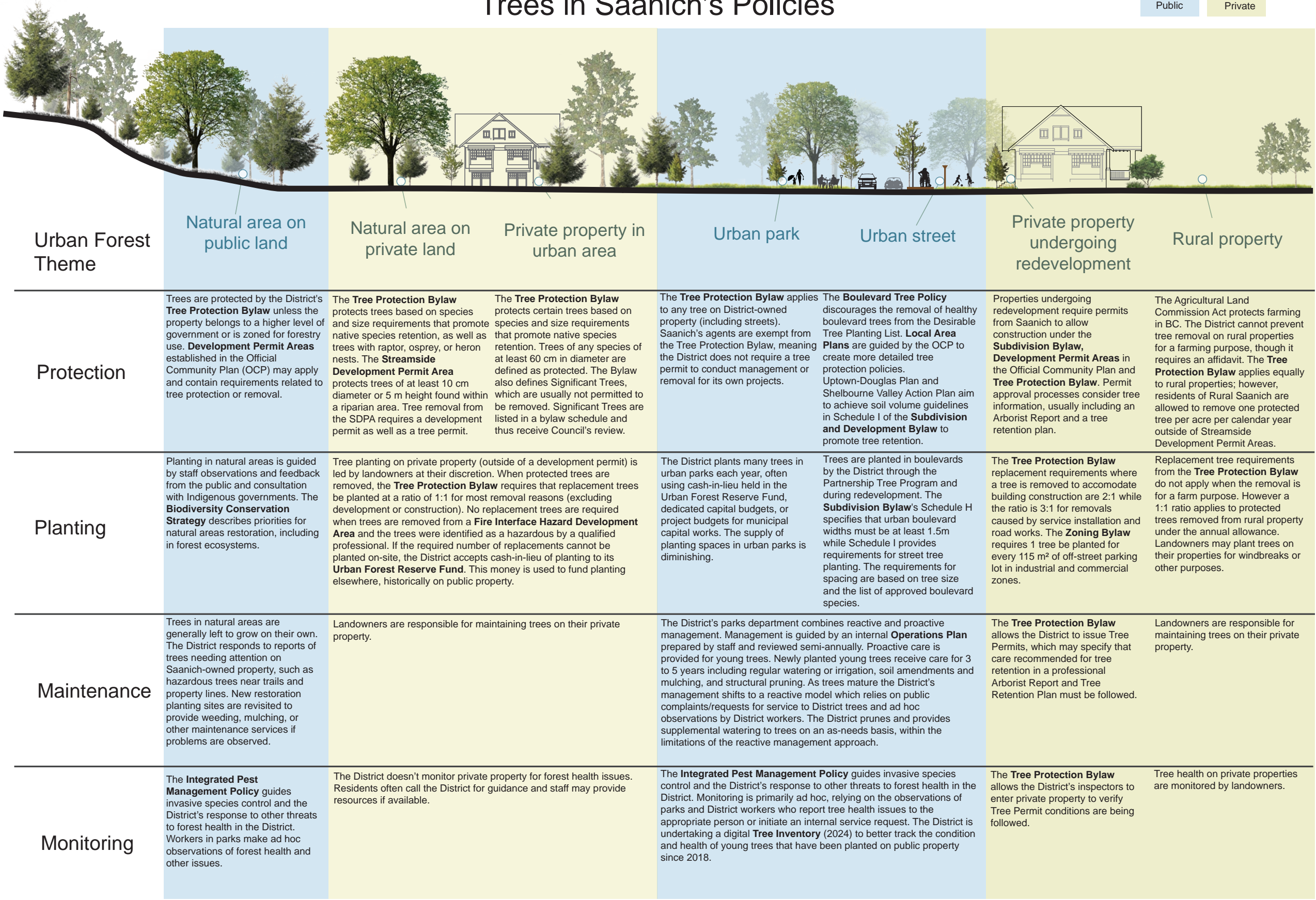| Urban Forest Theme	Natural area on public land	Natural area on private land	Private property in urban area	Urban park	Urban street	Private property undergoing redevelopment	Rural property
Protection	Trees are protected by the District's **Tree Protection Bylaw** unless the property belongs to a higher level of government or is zoned for forestry use. **Development Permit Areas** established in the Official Community Plan (OCP) may apply and contain requirements related to tree protection or removal.	The **Tree Protection Bylaw** protects trees based on species and size requirements that promote native species retention, as well as trees with raptor, osprey, or heron nests. The **Streamside Development Permit Area** protects trees of at least 10 cm diameter or 5 m height found within a riparian area. Tree removal from the SDPA requires a development permit as well as a tree permit.	The **Tree Protection Bylaw** protects certain trees based on species and size requirements that promote native species retention. Trees of any species of at least 60 cm in diameter are defined as protected. The Bylaw also defines Significant Trees, which are usually not permitted to be removed. Significant Trees are listed in a bylaw schedule and thus receive Council's review.	The **Tree Protection Bylaw** applies to any tree on District-owned property (including streets). Saanich's agents are exempt from the Tree Protection Bylaw, meaning the District does not require a tree permit to conduct management or removal for its own projects.	The **Boulevard Tree Policy** discourages the removal of healthy boulevard trees from the Desirable Tree Planting List. **Local Area Plans** are guided by the OCP to create more detailed tree protection policies. Uptown-Douglas Plan and Shelbourne Valley Action Plan aim to achieve soil volume guidelines in Schedule I of the **Subdivision and Development Bylaw** to promote tree retention.	Properties undergoing redevelopment require permits from Saanich to allow construction under the **Subdivision Bylaw, Development Permit Areas** in the Official Community Plan and **Tree Protection Bylaw**. Permit approval processes consider tree information, usually including an Arborist Report and a tree retention plan.	The Agricultural Land Commission Act protects farming in BC. The District cannot prevent tree removal on rural properties for a farming purpose, though it requires an affidavit. The **Tree Protection Bylaw** applies equally to rural properties; however, residents of Rural Saanich are allowed to remove one protected tree per acre per calendar year outside of Streamside Development Permit Areas.
Planting	Planting in natural areas is guided by staff observations and feedback from the public and consultation with Indigenous governments. The **Biodiversity Conservation Strategy** describes priorities for natural areas restoration, including in forest ecosystems.	Tree planting on private property (outside of a development permit) is led by landowners at their discretion. When protected trees are removed, the **Tree Protection Bylaw** requires that replacement trees be planted at a ratio of 1:1 for most removal reasons (excluding development or construction). No replacement trees are required when trees are removed from a **Fire Interface Hazard Development Area** and the trees were identified as a hazardous by a qualified professional. If the required number of replacements cannot be planted on-site, the District accepts cash-in-lieu of planting to its **Urban Forest Reserve Fund**. This money is used to fund planting elsewhere, historically on public property.		The District plants many trees in urban parks each year, often using cash-in-lieu held in the Urban Forest Reserve Fund, dedicated capital budgets, or project budgets for municipal capital works. The supply of planting spaces in urban parks is diminishing.	Trees are planted in boulevards by the District through the Partnership Tree Program and during redevelopment. The **Subdivision Bylaw**'s Schedule H specifies that urban boulevard widths must be at least 1.5m while Schedule I provides requirements for street tree planting. The requirements for spacing are based on tree size and the list of approved boulevard species.	The **Tree Protection Bylaw** replacement requirements where a tree is removed to accomodate building construction are 2:1 while the ratio is 3:1 for removals caused by service installation and road works. The **Zoning Bylaw** requires 1 tree be planted for every 115 m² of off-street parking lot in industrial and commercial zones.	Replacement tree requirements from the **Tree Protection Bylaw** do not apply when the removal is for a farm purpose. However a 1:1 ratio applies to protected trees removed from rural property under the annual allowance. Landowners may plant trees on their properties for windbreaks or other purposes.
Maintenance	Trees in natural areas are generally left to grow on their own. The District responds to reports of trees needing attention on Saanich-owned property, such as hazardous trees near trails and property lines. New restoration planting sites are revisited to provide weeding, mulching, or other maintenance services if problems are observed.	Landowners are responsible for maintaining trees on their private property.		The District's parks department combines reactive and proactive management. Management is guided by an internal **Operations Plan** prepared by staff and reviewed semi-annually. Proactive care is provided for young trees. Newly planted young trees receive care for 3 to 5 years including regular watering or irrigation, soil amendments and mulching, and structural pruning. As trees mature the District's management shifts to a reactive model which relies on public complaints/requests for service to District trees and ad hoc observations by District workers. The District prunes and provides supplemental watering to trees on an as-needs basis, within the limitations of the reactive management approach.		The **Tree Protection Bylaw** allows the District to issue Tree Permits, which may specify that care recommended for tree retention in a professional Arborist Report and Tree Retention Plan must be followed.	Landowners are responsible for maintaining trees on their private property.
Monitoring	The **Integrated Pest Management Policy** guides invasive species control and the District's response to other threats to forest health in the District. Workers in parks make ad hoc observations of forest health and other issues.	The District doesn't monitor private property for forest health issues. Residents often call the District for guidance and staff may provide resources if available.		The **Integrated Pest Management Policy** guides invasive species control and the District's response to other threats to forest health in the District. Monitoring is primarily ad hoc, relying on the observations of parks and District workers who report tree health issues to the appropriate person or initiate an internal service request. The District is undertaking a digital **Tree Inventory** (2024) to better track the condition and health of young trees that have been planted on public property since 2018.		The **Tree Protection Bylaw** allows the District's inspectors to enter private property to verify Tree Permit conditions are being followed.	Tree health on private properties are monitored by landowners.

Figure 15. Trees in Saanich's policies.

Saanich's Bylaws, policies and plans that intersect with the urban forest include:

TREE PROTECTION BYLAW

Applies on public and private property except where exempted by law. Defines protected trees and establishes a permitting process to regulate activities like cutting or removal. The bylaw also contains replacement requirements for certain removals.

BOULEVARD TREE POLICY

Guides the District's management and protection of trees in Saanich-owned road rights-of-way.

ZONING BYLAW

Regulates how land, buildings and other structures may be used and placed on a lot. Can also contain tree planting or coverage requirements throughout Saanich or for some land uses.

SUBDIVISION BYLAW

The Subdivision Bylaw sets the standards and specifications for works and services including the creation of new lots and other development applications.

OFFICIAL COMMUNITY PLAN

Saanich's Official Community Plan considers the urban forest to be a key part of Saanich's environmental integrity and defines Future Land Uses, shaping the form of development.

LOCAL AREA PLANS

Local Area Plans take direction from the Areas Plans, which includes Centre, Corridor and Village Plans, and often contain policies that influence the planting or overall distribution of urban forest canopy; they may set targets for canopy cover or tree density that new developments will need to achieve.

COUNCIL MOTION: ADOPTING THE 3-30-300 RULE

In 2021, Saanich Council endorsed the 3:30:300 Rule as a guiding principle for urban forest management. The rule is based on applied research in urban forestry and proposes that tree equity can be met when every person can a) see three trees from their home, b) live in a neighbourhood with 30 per cent canopy cover, and c) live within 300 m of a green space of at least one hectare in size.

Mitigation hierarchy

When making decisions regarding trees and projects, the mitigation hierarchy set forth by the BC Ministry of the Environment is a recommended approach. This hierarchy guides development and application of measures to mitigate impacts on trees and environmental values. The components of the mitigation hierarchy are shown in the figure below. The expectation is that all feasible measures at one level are considered before moving to the next, and that a rationale is provided for the approach that is taken. In practice, the levels within the mitigation hierarchy will be considered holistically and iteratively. The four components of the mitigation hierarchy are prioritized in the following order starting with the highest: 1. Avoid 2. Minimize 3. Restore on-site 4. Offset (off-site or on-site).
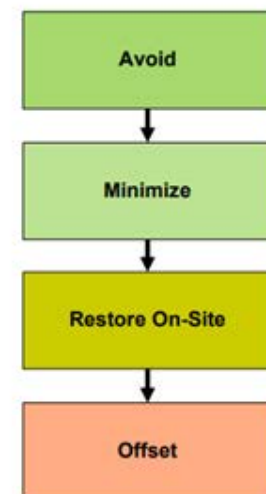
General Principles

1. Maintaining the integrity and natural functions and processes of ecosystems, and the resilience of ecosystems, is prerequisite to sustainable use of Saanich's trees, and essential to maintaining ecosystem goods and services over time.

2. Generally, the "higher" the risk to tree value, the more protective the mitigation measures should be and the more likely that offset measures will also need consideration for any impacts remaining after "restore on-site."

3. For an action or measure to be considered "mitigation," a proponent or third party must accept responsibility for implementation of appropriate mitigation measures, and there must be certainty that the mitigation measures will be carried out.

4. Non-proponent actions must be listed separately from any list of mitigation measures proposed by the proponent.

XₚÁ̵

(western redcedar)

XₚÁ̵ (western redcedar) is the iconic tree of British Columbia's mild, wet regions. Though not as tall as JSₗᵻ̵ɫĆ (Douglas-fir), XₚÁ̵ can outlive it, with old trees developing impressive fluted trunks that measure several metres across. W̱SÁNEĆ history relates that a rope of cedar was used to secure canoes to LÁU,WELNEW (place of refuge) during the great flood caused by XÁLS. All parts of the cedar tree have a traditional use. Find this tree in wet areas near streams and ponds by looking for its stringy, red-brown bark and soft, flat sprays of bright green scale-like leaves.

PRONUNCIATION

X is an unfamiliar sound, made by placing the tongue far back and blowing air, as if clearing your throat.

P is like the "p" in "pop"

Á̵ is like "ai" in "bait", followed by a glottal stop ("uh-oh")

Say it like whuh-pay

KEY TRENDS IN THE URBAN FOREST MANAGEMENT PROGRAM

Tree Removal

The District of Saanich tracks tree removals on District-owned property and on private property where a tree cutting permit is required. Between 2017 and 2021 (inclusive):

- 1,432 trees were removed from District-owned property, or approximately 280 trees per year.

- 7,747 trees were removed from private property, or approximately 1,550 trees per year.

- The rate of removal is expected to increase as Saanich's zoning and development bylaws are updated to reflect provincial housing mandates.

Recorded tree removals are not a complete picture of loss in Saanich. Many trees are not protected by the tree bylaw and can be removed at any time.
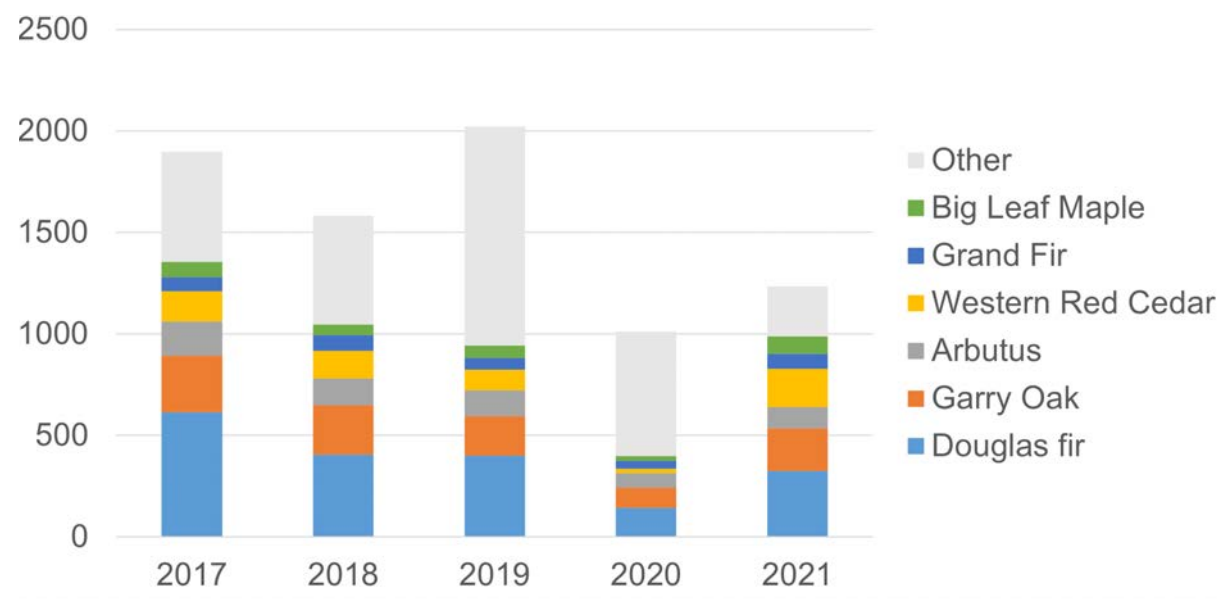
Planting Trees

The District of Saanich supports the urban forest by requiring replacement trees be replanted when protected tree removal occurs and through programs to plant new trees on public property.

Protected trees that are removed must be replaced by planting at a ratio of between 1:1 and 3:1, depending on the reason for removal under the Tree Protection Bylaw. However, the District of Saanich has experienced challenges in ensuring that replacement trees planted are of a suitable quality and potential size to replace the canopy of trees removed. Recording replacement trees in the recently developed tree mapping and tracking system is a priority for the District of Saanich.

Separate from replacement trees, the District of Saanich plants over one thousand new trees each year in urban settings and natural areas. Each year, between 80-90 per cent of the trees planted by the District of Saanich are native species. Since Council declared a Climate Emergency in 2020, the rate of planting on public property has roughly doubled from around 1,200 trees to 2,400 trees per year, to support the Climate Plan's goal of planting 10,000 trees by 2025. Saanich is on track to meet the goal next year.

In March 2023, Council directed District staff to explore options to increase tree planting to a rate of up to 10,000 trees per year for ten years for a total of 100,000 trees. Meeting this goal is challenging due to limited planting sites on public property, and competition for space with different uses, utilities, and/or other conflicts. At the same time, redevelopment and streetscape upgrades may provide opportunities to create some new planting sites.

Tree planting on private property is only tracked to verify compliance with development permit or tree cutting permit requirements and so property owners know that some trees on their property are defined as protected by being required replacement or retained as part of a development. As such, tree planting data on private land is incomplete.

Administration of the Tree Protection Bylaw on public lands, coordinated municipal development plan review, service requests, and arborist supervision services for municipal infrastructure projects

Members of the public, utilities, external agencies, and other municipal departments liase with Parks' Urban Forestry, Natural Areas, and Community Stewardship section to request a variety of services. Qualified staff regularly conduct plan reviews of municipal capital projects to confirm existing trees are inventoried, and which ones are to be retained and which ones proposed for removal. Make recommendations to preserve trees during construction. Ensure tree protection fencing is installed correctly. Propose planting sites for replacement trees and ensure traffic access and material storage is considered during the of protection of retained trees.

Call volume to the Urban Forestry team alone has increased by roughly 50 per cent since 2016 and is now approaching over 2,000 calls per year (Figure 17). Calls often concern complicated decisions regarding infrastructure and protection of trees on District-owned property from construction impacts.

Public safety services

Parks' Urban Forestry and Natural Areas teams provide extensive public safety services including provision of adverse storm and weather event response and hazard tree mitigation services on public lands. Parks' Natural Areas section receives approximately 100 calls for service annually; many of these requests for service go towards supporting Saanich's Pulling Together and other stewardship programs, including conducting hazard tree assessments.
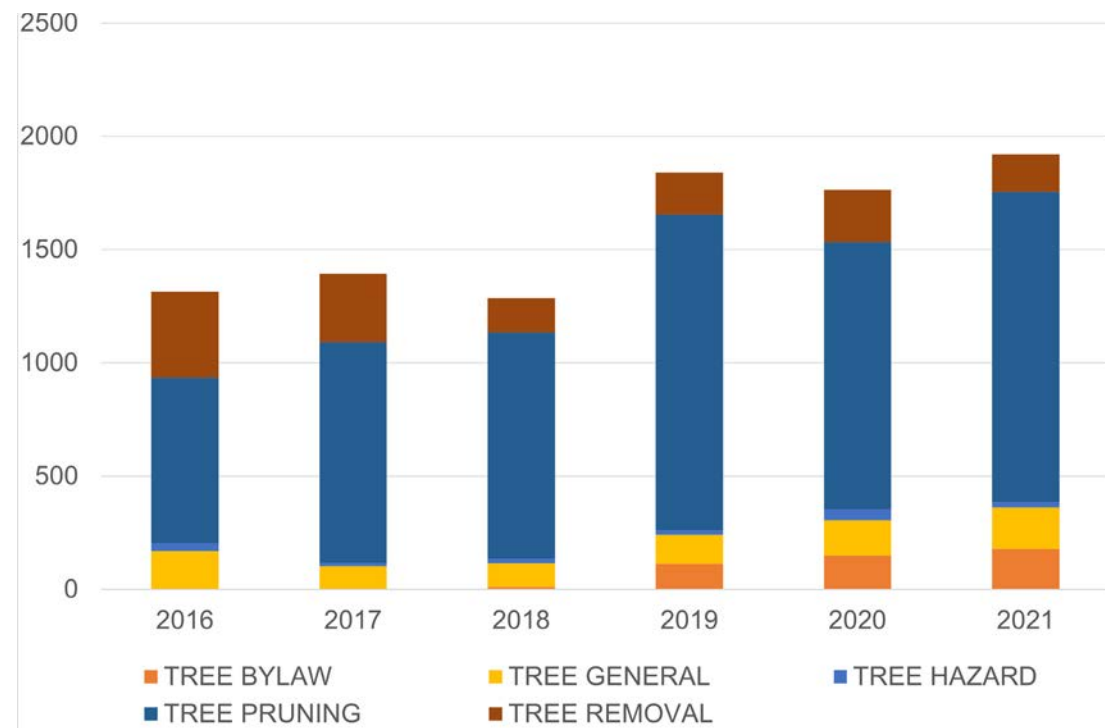

Figure 16. Legal removal of protected trees from private property, estimated by species.

Figure 17. Service call volumes to the Parks Division's Urban Forestry team

4.4 Progress Report

The State of the Urban Forest Report considered written policies and procedures as well as the District's urban forest management practices and assessed these against a set of benchmarks representing an ideal urban forest program. Despite progress on implementing the 2010 Urban Forest Strategy, the District of Saanich's urban forest management scored Fair, indicating a solid base for the program yet also depicting some areas where improvement is still needed. An area of strength shown in the report card for the 2010 strategy is in integrating urban forestry into corporate decision-making, policies, and plans. Collecting baseline data on public tree assets, preparing for climate change, and advancing reconciliation through urban forestry are areas where the District could improve.

Urban Forest Report Card

- 2023 program grade (in colour)
- Work already in progress is expected to improve rating
- Assessment based on partial or interim data

THEME: PLANNING & INTEGRATION

	Poor	Fair	Good	Optimal
Awareness of the urban forest as a community resource			●	
Tree canopy cover relative to established canopy cover goals			●	
Clear and defensible urban forest canopy canopy cover			●	
Interdepartmental/municipal agency cooperation in urban forest strategy implem.			●	
Municipality-wide urban forest management plan			●	
Municipal natural asset management		●		
Municipal-wide biodiversity or greenspace network strategy*		●		
Municipal urban forestry program capacity			●	
Urban forest funding to implement a strategy		●		

THEME: COMMUNITY ENGAGEMENT & STEWARDSHIP

	Poor	Fair	Good	Optimal
Citizen involvement and neighbourhood action			●	
Involvement of large private land and institutional land holders		●		
Urban forest research		●		
Regional collaboration		●		

THEME: PROTECTING TREES

	Poor	Fair	Good	Optimal
Policy/regulations for the protection and replacement of private and municipal trees			●	
Policy/reg. for sensitive ecosystems, soils, or permeability through private development		●		
Internal protocols guide municipal tree or sensitive ecosystem protection			●	
Standards of tree protection/care observed during development or by arborists		●		
Cooperation with utilities on protection and pruning of municipal trees		●		
Knowledge of trees on private property		●		

THEME: PLANTING TREES AND CREATING SPACE

	Poor	Fair	Good	Optimal
Municipal tree planting and replacement program design, planning, and implementation		●		
Species diversity**		●		
Age diversity or size class distribution**			●	
Development requirements to plant trees on private land			●	
Streetscape and servicing specifications and standards for planting trees		●		
Equity in planting program delivery	●			
Native species planting			●	
Selection and procurement of stock		●		

THEME: TREE HEALTH & RISK MANAGEMENT

	Poor	Fair	Good	Optimal
Tree inventory*	●			
Natural areas inventory			●	
Maintenance of intensively managed trees		●		
Publicly owned tree species condition assessment**	●			
Tree risk management	●			
Emergency response planning			●	
Pest and disease management			●	

THEME: CLIMATE CHANGE ADAPTATION & MITIGATION

	Poor	Fair	Good	Optimal
Species suitability**	*No rating, see Appendix 1*			
Tracking of operational carbon footprints and urban forest carbon-cycle balance	●			
Ecosystem services targeted in tree planting projects and landscaping		●		
Waste biomass utilization		●		

* Work in progress is expected to improve this indicator
** Pending inventory data.

5 Drivers of Change

Several factors influence the urban forest and need to be considered by the Urban Forest Strategy. These factors can be called drivers of change in the urban forest. Some drivers may threaten to decrease the extent or health of the urban forest and/or the District's capability for urban forest management, while others are opportunities for urban forest enhancement and improvement of the urban forest program. Often, there is more than one side to a driver, as change can present both challenges and opportunities.

5.1 Development

Development is anticipated to drive both urban forest canopy loss and gain over the coming decades.

Challenges
Saanich is a growing community with a limited land base inside the Urban Containment Boundary. Densification is a net positive for the environment because it reduces urban sprawl and allows people to live closer to their daily needs, preserving forests in rural areas in the process. However, construction often causes the loss of trees that currently exist in urban areas, and larger buildings and higher densities alongside associated infrastructure requirements make tree retention especially challenging. Primary Growth Areas in the Official Community Plan overlap with areas of low tree equity and low current tree canopy. The larger a tree is, the more difficult it is to retain during construction, although its value if successfully retained will be much greater than any young replacements. It takes time to grow "replacement" trees to a size that equals trees that have been lost, during which there may be a decrease in the ecosystem services available to the nearby community. Another significant challenge is loss of available planting space for trees, including new and replacement trees, as a result of lack of suitable soil volume from development, itself increasing impermeable surface area resulting from development, and space being taken up by associated infrastructure.

Opportunities
Although redevelopment threatens the urban forest in the short-term, with investments in tree planting technology and tree-friendly urban design and infrastructure even higher density neighbourhoods can achieve canopy cover that will contribute to meeting the 3:30:300 rule. Setting clear regulations regarding retention of High-value trees during development can help bridge between the present and future urban forest. Redevelopment at higher densities creates wealth which can be invested in higher standard planting designs, technology, and service levels for tree care needed in more urban environments. Development can also be a trigger for land dedication or new park acquisition, helping create the space for trees in wider boulevards and new greenspaces.

5.2 Climate Change

Saanich's climate is shifting, becoming hotter year-round with longer dry spells in the summer. Climate change is reducing the life expectancy of trees in Saanich, and is already driving up the costs of management.

Challenges

Climate change in Saanich is already impacting the conditions faced by trees and people. Impacts include longer, hotter, and drier summers, more intense rainfall and storms, and sea level rise. These changes are causing the loss of native trees like western redcedar (XPᴀ̱) and grand fir (SK̲EMÍ̧EK̲S) because of drought stress, shoreline trees from salinization, and urban trees in parks, yards, and streets from extreme heat, drought, and storms. Climate change is also a driver of other forest health issues, like the spread and impacts of pests and diseases. Saanich needs to protect the urban forest from these impacts because of the significant role that trees play in helping the community adapt to climate change, including reducing urban heat and managing stormwater, as well as mitigating climate change through carbon sequestration.

Opportunities

Although there are no true upsides to human-caused climate change, general warming is likely to support an increase in Saanich's urban tree diversity over time by allowing species from warmer climates to successfully be planted here. This is a double-edged sword, because climate warming also supports the disruption of natural ecosystem functions by increasing the suitability of Saanich's landscape for invasive species and other agents of poor forest health. Negative impacts are more certain than the benefits of a more diverse planting palette for urban trees. In natural areas, introducing trees with better adapted genetics (e.g., planting Douglas-fir seedlings from warmer, drier places), can help build resilience in native forest ecosystems. This is a form of assisted migration and is already being implemented in British Columbia through the Province's Climate-Based Seed Transfer system. Assisted migration can be contentious because of potential impacts on local ecology, damage to Indigenous cultural systems and customary rights, and ethical debates about the proper role of humans in ecosystem maintenance. At the same time, it is likely to be a key tool in supporting forest health and native biodiversity in coming years.

5.3 Forest health

Forest health factors like disease, invasive species, and climate stress control mortality. In 2019, just under 2 per cent of Saanich's urban forest canopy was believed to be dead or dying. Although mortality depends on forest ecosystem structure and species composition, this estimate is higher than field surveys of annual mortality in western Oregon (1%)[33] and similar results from forests of Douglas-fir, cedar, and hemlock (2-3%) affected by Armillaria root rot in the southern interior of BC[34].

Challenges

Death and decay are normal events in the urban forest and create much needed habitat to support biodiversity. However, in urban contexts tree mortality often needs to be managed to reduce risk to public safety and to maintain environmental quality. Forest health is the outcome of abiotic (environmental) and biotic (living) factors at work in the urban forest. Trees stressed by outcomes of climate change

and/or species invasion can be more susceptible to a variety of diseases. For example, native arbutus (K̲EK̲EYIȽĆ) are struggling with native leaf blight diseases that were previously not a serious health concern, while Douglas-fir (JSᴀ̱IȽĆ) is being killed by armillaria root rot and threatened by range expansion of the fungus causing Swiss Needle-Cast disease.

Invasive species outcompete native species in local ecosystems leading to a loss of ecosystem structure and function. Invasive insects, fungi, and bacterial pathogens of trees are often directly responsible for tree diseases, while invasive plants more often affect the urban forest by disrupting patterns of decay and regeneration. Saanich's mild climate permits many introduced invasive species to arrive and establish here. With climate change, the risk of new species arriving and becoming invasive is rising. An example of an invasive species with potentially significant impacts on the urban forest is the Emerald Ash Borer beetle, which was recently discovered in Oregon and has caused widespread loss of ash trees in Central Canada and the midwestern United States.

Human impacts on natural ecosystems sometimes create the conditions for a native species to become a pest, resulting in a similar loss of ecosystem function. In Saanich, an example is black-tailed deer, which have exploded in population due to the exclusion of their natural predators and hunting from urban areas. Deer are pests of the urban forest because they prefer to graze on young tree foliage and newly planted trees, causing lifelong damage and sometimes affecting regeneration success.

Opportunities

The District of Saanich's ability to manage the forest health is limited by the state of its knowledge and staffing and resource capacity constraints. Ongoing work to inventory street and urban park trees, as well as trees planted under a tree cutting permit requirement, is building Saanich's knowledge of the urban forest. In the future, these records can be used to schedule tree work and record up-to-date information about tree condition, supporting a higher level of service. Shifting to proactive service levels for street and park trees can help improve incidental observation of forest health issues which are expected to increase in frequency. In a period of rapid environmental change, the relationships between organisms and the conditions they face are difficult to predict, making investments in monitoring for the urban forest important for securing service delivery.

Some forest health issues are too big for Saanich to manage on its own – effects of climate change like increased invasive species vulnerability, sea level rise, and shifting ecosystems are best addressed in partnership with other municipalities in the region and higher governments, as well as institutions with research capacity like local colleges and universities. The urban forest is a living laboratory through which urban forest managers and the community can learn about the environment and trial new ideas for management. Additionally, the District's urban forest management continues to center western perspectives over Indigenous ones. To face changing conditions, urban forest management will need to incorporate traditional ecological knowledge alongside scientific knowledge.

5.4 Resourcing the urban forest program

Saanich's combined budget for urban forestry and natural areas was just under $3 million in 2021. Asset value is almost certainly over $100 million, based on limited information about ecosystem service provision discussed in Chapter 2.

Challenges

Saanich's urban forest program is increasingly under pressure to achieve higher levels of service for tree planting, protection, and care while the conditions for urban forest management become more difficult. On public property, the most suitable planting sites have been filled, meaning it is becoming more difficult to offset tree loss with new public planting programs. Ensuring that staff have the resources to run an effective and efficient urban forest management program is made more important by the growth of the community and increasing public expectations for urban forest management.

Development will cause a loss of tree canopy from private property that will need to be offset elsewhere for Saanich to maintain its urban forest canopy and meet 3:30:300. In higher density areas, much of this offset will need to be accommodated on public property, requiring investments in technology and innovation. This shift of urban forest canopy from private to public property has implications for the demand for urban forest management by the District of Saanich, as street and park trees maintained by local government increase in number relative to trees on private property. Although Saanich has worked to protect trees and promote the urban forest through its bylaws and policies, changing circumstances make re-examining the tools available to the District important. The State of the Urban Forest Report identified several policies and bylaws that could be amended to help the District achieve its aspirations.

Opportunities

Building a community-wide effort around urban forestry can help drive the Urban Forest Strategy forward and reduce the management burden for local government. Saanich already has successful models for bringing community volunteerism to support urban forest management. The Pulling Together program for invasive plant removal and the Partnership Tree Program for installing new boulevard trees are making important contributions to the health of the urban forest. Expanding these programs could increase tree planting rates and potentially contribute to the development of local monitoring for urban forest health and biodiversity indicators and. There are also existing partnerships that could be expanded to further engage youth in urban forest management, if staff capacity were available. Other logical partnerships that could be a focus for expanding programming are environmental non-profits and community groups, academic or other institutions with relevant research capacity like the University of Victoria or Camosun College, and major employers/private sector organizations. Saanich's Urban Forest Reserve Fund, dedicated for tree planting in the community, could be better leveraged to support expanded programming focused on increasing tree canopy cover in the community. As Saanich improves its urban forest program, it can gain recognition from initiatives like the Arbor Day Foundation's Tree Cities of the World program to help advertise and represent its accomplishments to the community, driving engagement and participation in existing programs. Improving the brand of the urban forest program also supports applications to external funding programs, which typically seek to work with municipalities enacting good asset management for urban forests.

6 Vision for the Future

6.1 What we heard from the community

Community engagement has helped to shape the Urban Forest Strategy update with two rounds of outreach in the Spring of 2023 and 2024 (Table 3). The first engagement phase aimed to understand the community's urban forest values, concerns, and aspirations to update the Strategy's vision, principles, and goals. The second phase of engagement followed the public release of the draft Strategy and introduced our vision and roadmap for urban forest management to the community.

We heard from over 500 people who participated in online or in-person engagement opportunities, which included an online mapping tool, an online survey, an online open-house, and two in-person open houses. People from all neighbourhoods participated in engagement opportunities. We also heard from 15 community partners representing regional local governments and the environmental, arboriculture, and development sectors.

Table 3. Summary of the engagement program for the Urban Forest Strategy.

Date	Engagement	# of Participants
July 2022 - May 8, 2023	Mapping tool	312 submissions
April - May 2023	Survey	380 submissions
April 18, 2023	In-person open house (joint Urban Forest and Biodiversity Conservation Strategies)	>100 attendees
April 19, 2023	Virtual open house	49 attendees
April 27, 2023	Community partners workshop	15 community partners
January 12 & May 10, 2023	Virtual meetings with WSÁNEĆ Leadership Council (joint Urban Forest and Biodiversity Conservation Strategies)	
May 1, 2024	Technical Workshop	12 attendees
May 9-26, 2024	UFS Questionnaire	N/A (Currently open)
May 14 & 16 2024	In-person and online open house (joint Urban Forest and Biodiversity Conservation Strategies)	N/A

6.1.1 Values and vision

People highly value the role of the urban forest in preparing and protecting Saanich from the worst impacts of climate change. The ecological and environmental roles of the urban forest are also seen as important. When asked to imagine what Saanich's urban forest might look like in the future, most people spoke about having more trees in Saanich. People desire an urban forest that is diverse in species but keeps space for native tree species and respects their contributions to the uniqueness of place. There is hope that the urban forest can be well-protected, with large, older trees continuing to find homes in Saanich. 79 per cent of respondents to the online survey shared that they would like to see canopy cover increase within the Urban Containment Boundary, while 95 per cent think canopy cover in rural areas should be increased or maintained (Figure 18).

"I'd like to see Saanich with tree-lined streets and boulevards, and wide sidewalks with seating areas shaded by trees."

"Saanich will have a complete inventory of public trees and proactively manage green assets. […] A culture of stewardship will prevail."

"Areas of mature forest have been protected and kept healthy, maintaining habitat for native flora and fauna."

"A world-class place close to the city (large trees, Garry oak meadows, wetlands, great trails) that gives me rest and relaxation."

"Differentiating between protecting parcels of trees and protecting solitary trees is key."

"Providing crucial environmental functions to make the municipality livable. And people realizing their well-being is directly tied to a healthy urban forest."

"The overwhelming impression is of a continuous tree canopy with a wonderful variety of trees. [My visitors] love the wild park areas of Garry oaks and native shrubs which we've passed through."

"Saanich needs to be a good neighbour in managing the urban forest."
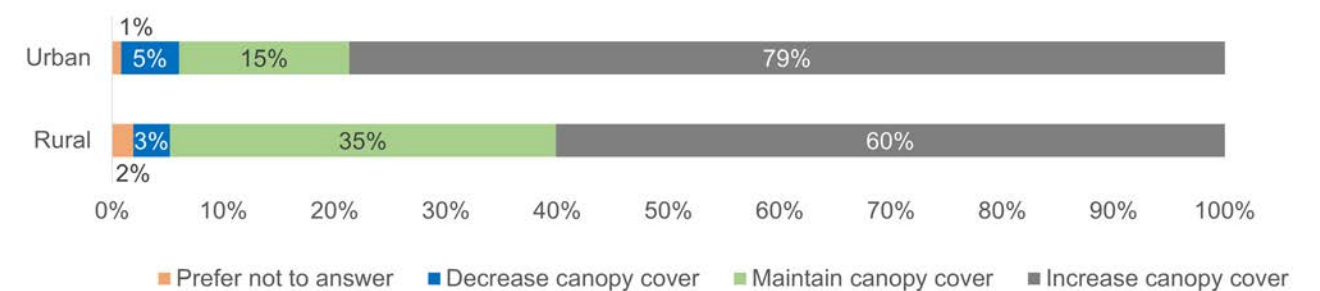

Figure 18. Preferences of survey respondents for increasing or decreasing canopy cover in urban and rural areas.

Residents expressed a clear preference for Saanich to develop streetscapes that include large-sized trees of mixed spacing and species. Only one-third of survey respondents currently live on such a street, while almost two-thirds want to. Very few people want to live on streets with small trees or few or no trees.

A. Few or no trees

B. Regularly spaced small trees

C. Regularly spaced, medium-sized trees

D. Mixed spacing and species, medium-sized trees

E. Regularly spaced, large trees

F. Mixed spacing and species, large-sized trees

Figure 19. Sample images rated by survey respondents to describe the street where they currently live and how they would like their street to look.
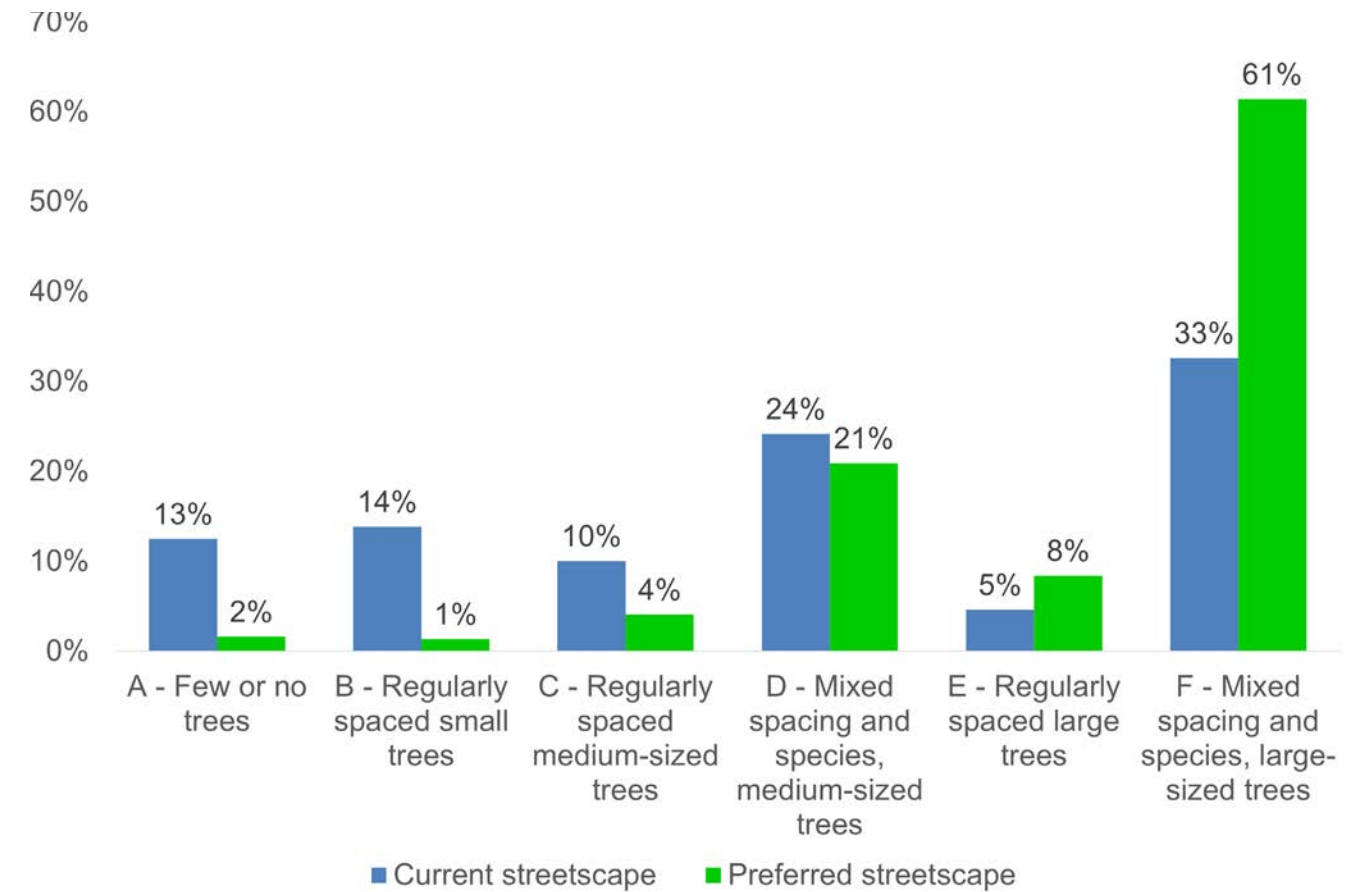

Figure 20. Preferences expressed by survey respondents for sample urban forest streetscapes.

6.1.2 Places of Value

We heard that small natural areas in the Urban Containment Boundary are extremely important places people go to experience the urban forest. These places may have large mature trees, scenic beauty, and/or a high variety of native trees and plants. In rural and natural areas, people value the opportunity to be immersed in nature. Engagement participants also helped identify several places where the urban forest is under threat, especially due to land use changes, invasive plants, and/or damage from dogs, deer, and other animals.
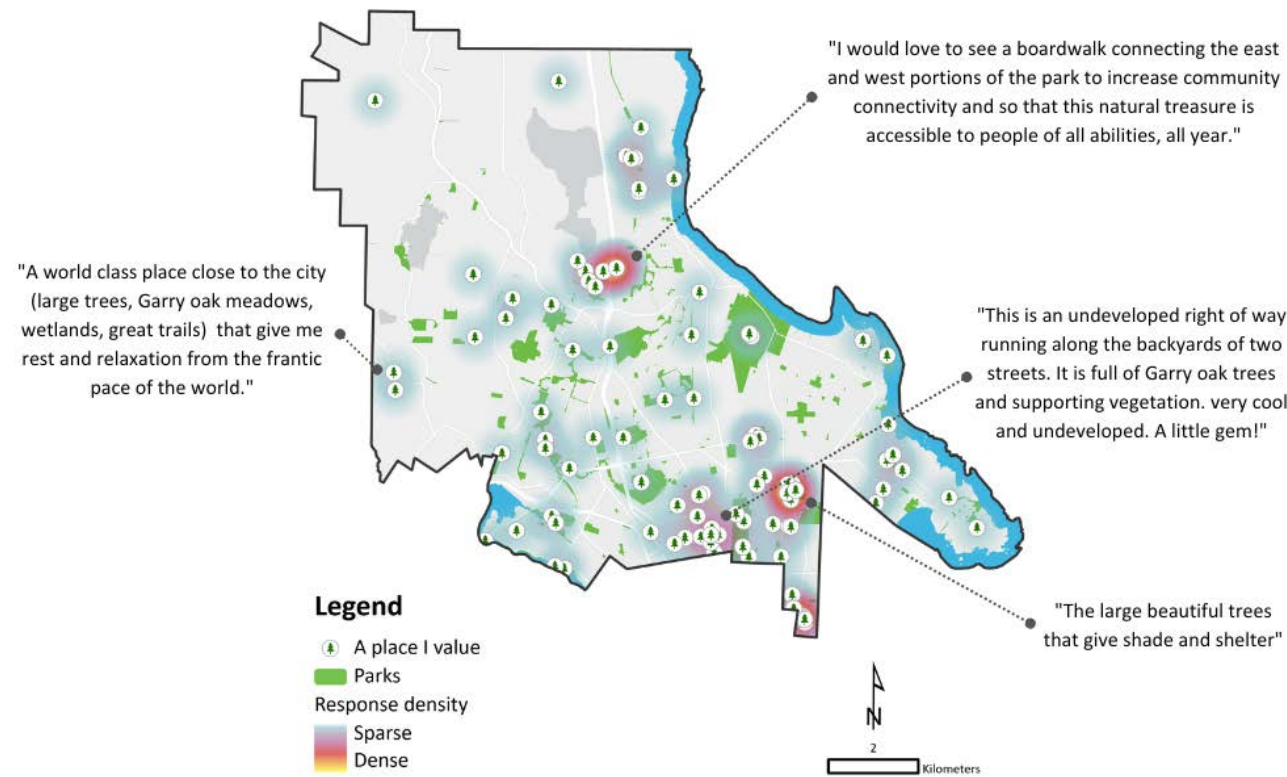
Figure 21. Places of value submitted by residents to the online mapping tool.
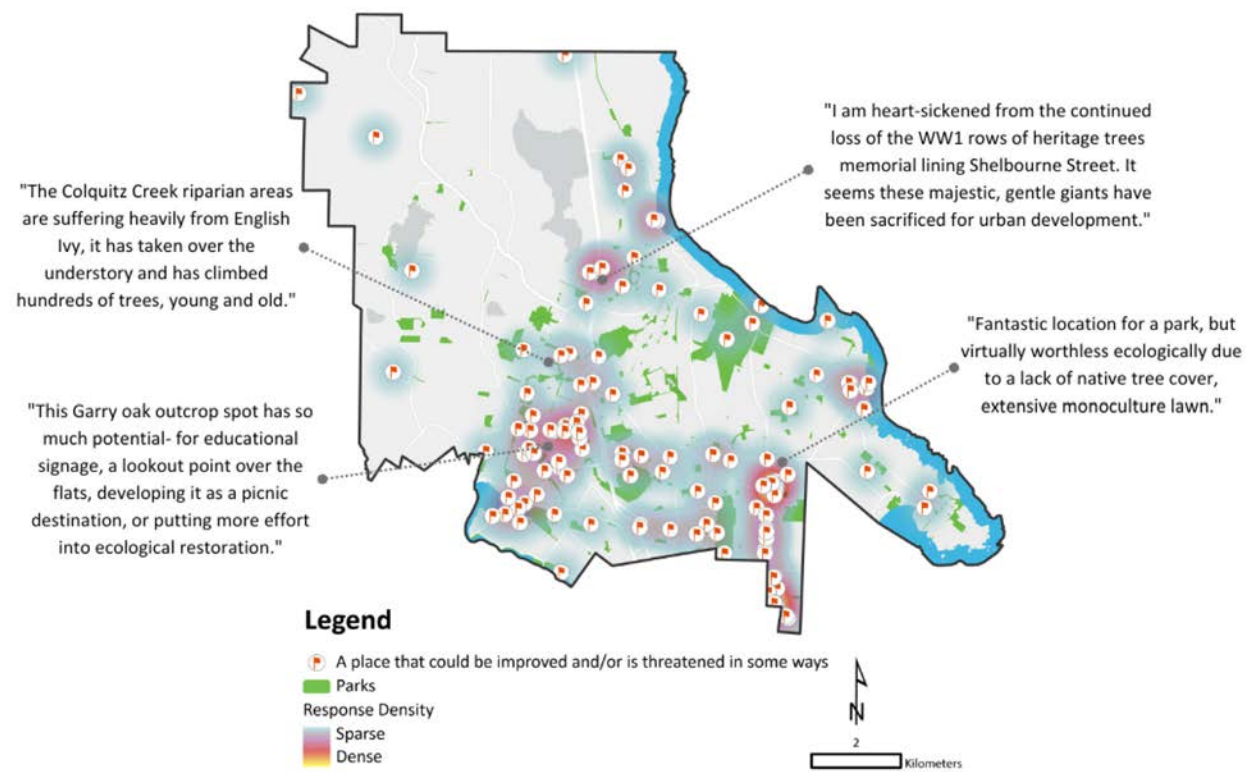
> "I would love to see a boardwalk connecting the east and west portions of the park to increase community connectivity and so that this natural treasure is accessible to people of all abilities, all year."

> "A world class place close to the city (large trees, Garry oak meadows, wetlands, great trails) that give me rest and relaxation from the frantic pace of the world."

> "This is an undeveloped right of way running along the backyards of two streets. It is full of Garry oak trees and supporting vegetation. very cool and undeveloped. A little gem!"

> "The large beautiful trees that give shade and shelter"

Legend
- 🌲 A place I value
- 🟩 Parks

Response density
- Sparse
- Dense

Figure 22. Places needing improvement in the urban forest identified by residents via the online mapping tool.

> "The Colquitz Creek riparian areas are suffering heavily from English Ivy, it has taken over the understory and has climbed hundreds of trees, young and old."

> "This Garry oak outcrop spot has so much potential- for educational signage, a lookout point over the flats, developing it as a picnic destination, or putting more effort into ecological restoration."

> "I am heart-sickened from the continued loss of the WW1 rows of heritage trees memorial lining Shelbourne Street. It seems these majestic, gentle giants have been sacrificed for urban development."

> "Fantastic location for a park, but virtually worthless ecologically due to a lack of native tree cover, extensive monoculture lawn."

Legend
- 🔴 A place that could be improved and/or is threatened in some ways
- 🟩 Parks

Response Density
- Sparse
- Dense

6.1.3 Priorities for Management

The community has shown strong support for the District to continue and enhance its urban forest management on public and private property. The community values the District's focus on natural restoration of the region's unique ecosystems and recognizes the important role of development rules and standards in setting up Saanich's urban forest for growth. All potential actions to support urban forestry polled by the online survey received majority support.
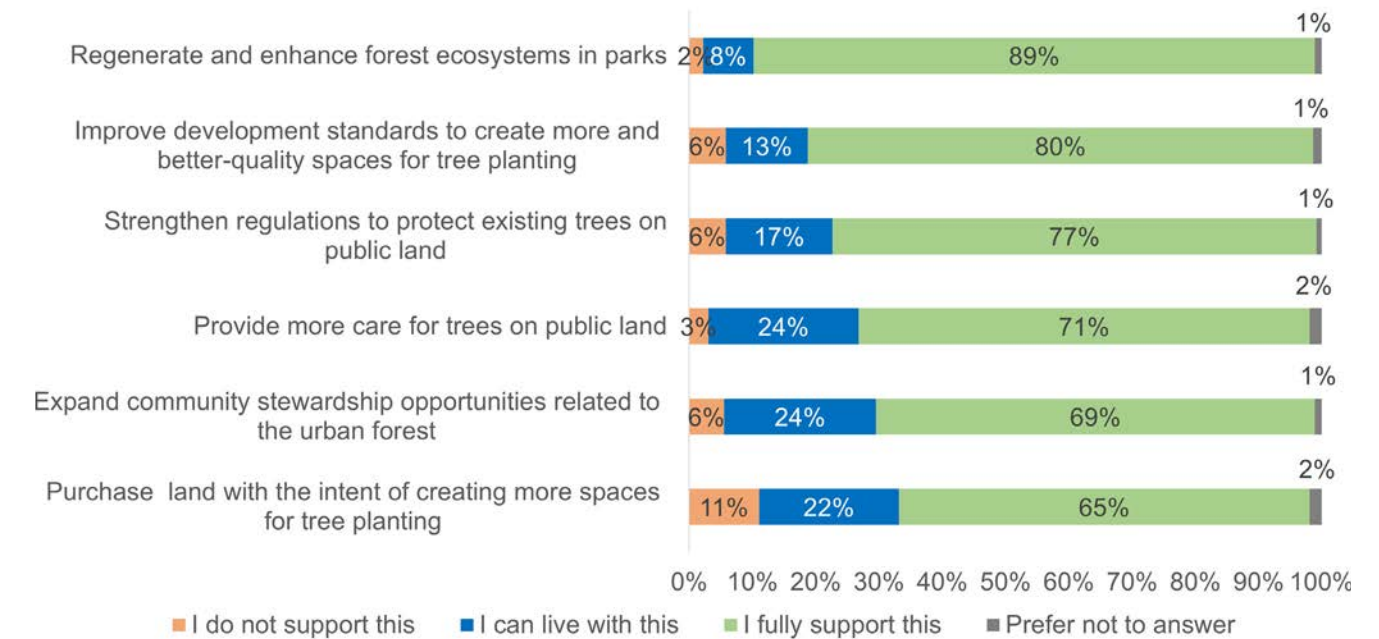

Figure 23. Support for potential urban forest management activities on public property.

WSÁNEĆ LEADERSHIP COUNCIL: WHAT WE HEARD

Two in-person workshops with the WSÁNEĆ Leadership Council and community, on January 12th and May 10th, 2023 were organized to gather their input on the development of the Urban Forest Strategy and Biodiversity Conservation Strategy. In addition, staff presented updates on strategy development to the WLC Technical Committee in Fall 2023 and April 2024.

The WSÁNEĆ Leadership Council emphasized the importance of respecting everything, living and deceased. Respect should be the principle we follow in planning and caring for the environment and in developing and building a working relationship and walking together. An ÁTOL,NEUEL ("Respecting One Another") Memorandum of Understanding (MOU) between the W̱SÁNEĆ Leadership Council and the District of Saanich was signed to reflect the idea and practice of respecting all. The Council also highlighted the significance of passing on knowledge and traditions and prioritizing of strengthening ecosystems within Saanich.
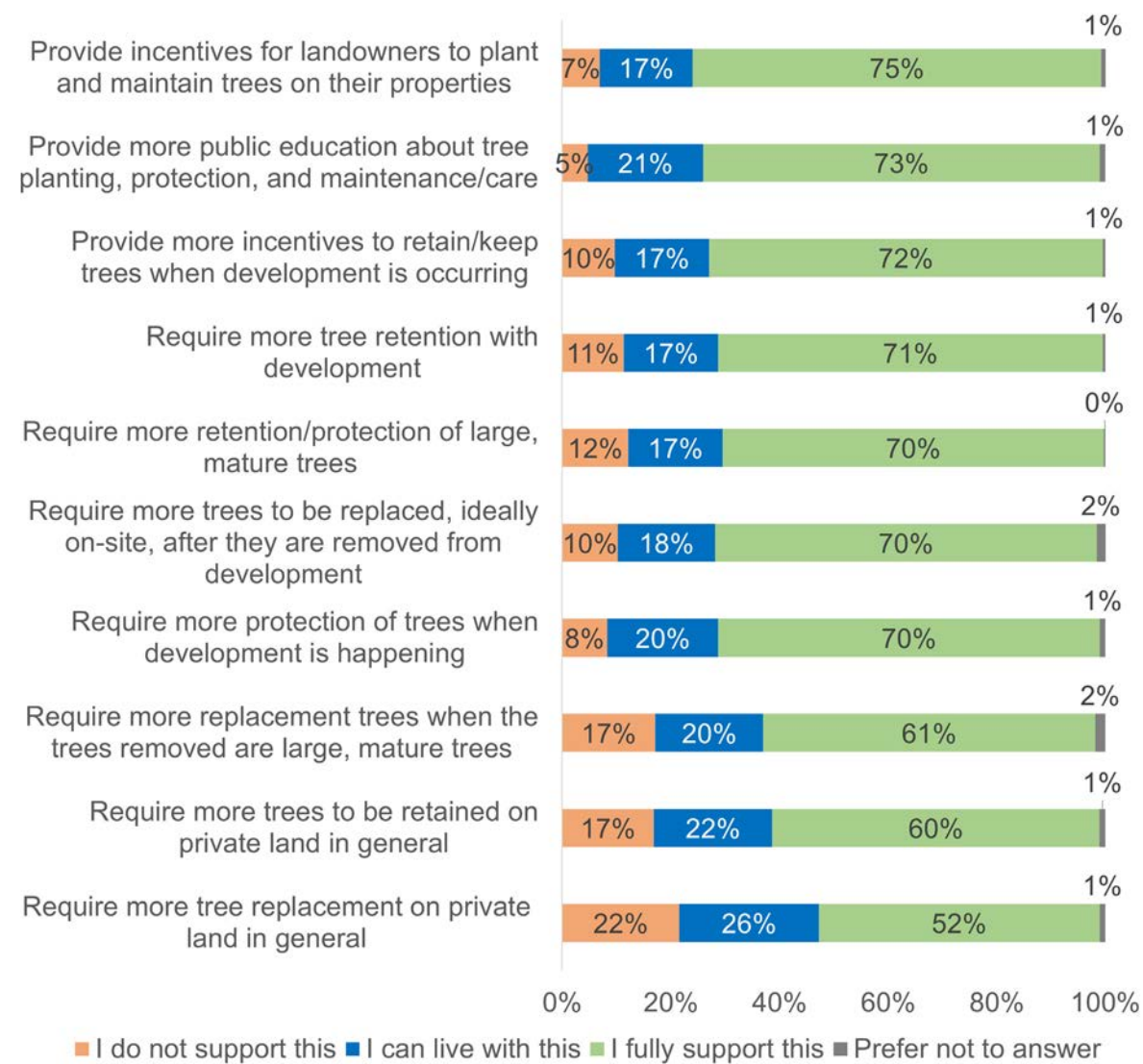
Figure 24. Support for potential urban forest management activities on private property.

Despite clear support from the community for urban forestry overall, engagement revealed mixed satisfaction with the urban forest services currently provided by the District of Saanich. Dissatisfied individuals outnumber satisfied people regarding several important urban forest services, including tree planting, tree protection, public education and outreach, replacement trees, and opportunities for community stewardship.
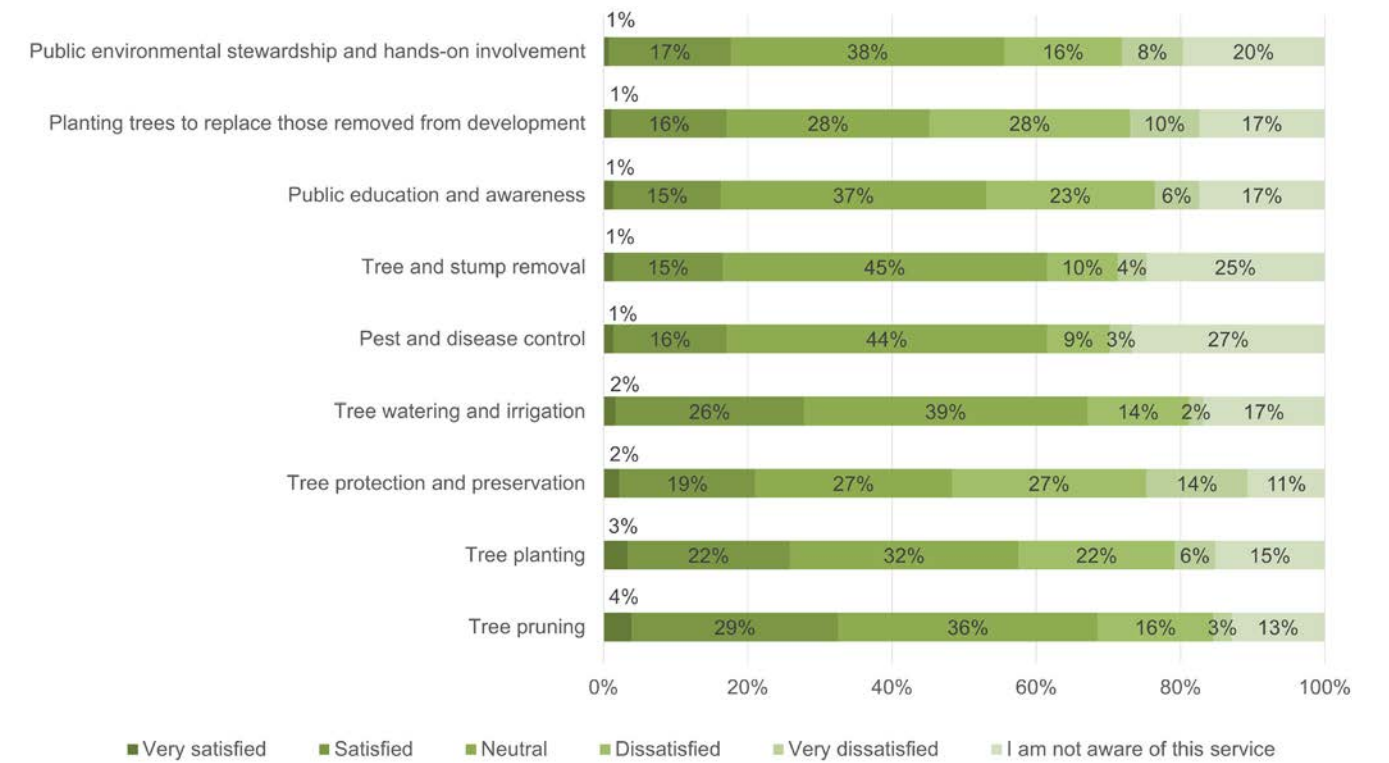
Figure 25. Satisfaction with existing urban forest service levels provided by the District of Saanich.

The online survey asked respondents if they would be willing to pay for improved urban forest services by the District of Saanich. 92 per cent are willing to pay something to improve the municipality's urban forestry services, with most respondents willing to pay at least $50 per year per household.
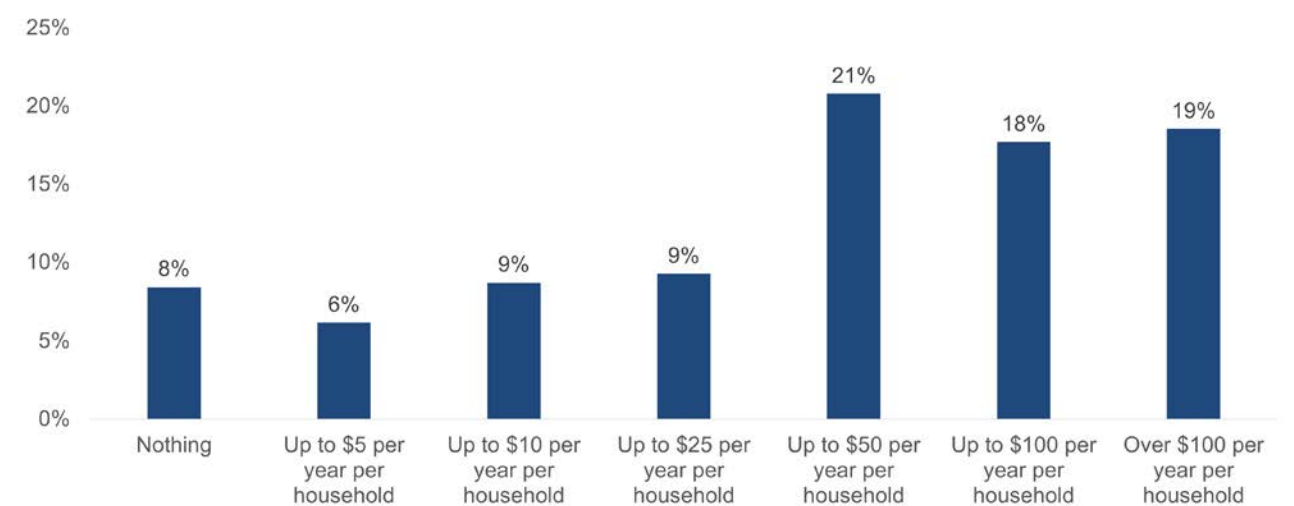

Figure 26. The amount of money that survey respondents would be willing to pay for the urban forestry program to achieve the outcomes they prefer.

6.2 A Strategic Framework for urban forest management

The engagement program for the Urban Forest Strategy informed the development of Saanich's vision for the urban forest:

VISION

The urban forest in Saanich is a thriving, interconnected system of trees and forests across the municipality, nurtured by the entire community to support the health and well-being of current and future generations.

The vision can motivate our actions today and in the future. It reflects three key ideas for the Urban Forest Strategy. Firstly, that the urban forest is a living and interconnected system found throughout Saanich's boundary. Secondly, that the entire community, including the District boundaries of Saanich, community, volunteers, residents, institutions, and First Nations governments play a key role in urban forest management. Thirdly, it centres the health and well-being of current and future generations as the centrepiece of urban forest management.

To support the vision, the Urban Forest Strategy develops building blocks for implementation:

Goals High-level statements that relate the vision to themes in urban forest management.

Strategies Related groups of actions that will help achieve a goal.

Actions Will propose items for the District of Saanich to implement to support the strategies.

Targets Indicators for tracking progress on implementation, including a canopy cover target for Saanich. These will be refined in the Action Plan.

GOALS AND STRATEGIES FOR SAANICH'S URBAN FOREST

Goal 1. Protect, connect and enhance the urban forest in harmony with built and natural systems.

Strategy 1.1.   Improve policy, regulations, processes and standards for integrating trees and forests into the built environment.

Strategy 1.2.   Expand the urban forest in areas of low tree canopy cover and higher social need.

Strategy 1.3.   Improve the quality and suitability of trees being planted for site and climate requirements in urban locations.

Strategy 1.4.   Connect and enhance natural forests.

Goal 2. Manage the urban forest in alignment with best practices to support healthy and safe trees.

Strategy 2.1.   Transition to more proactive urban forest maintenance.

Strategy 2.2.   Incorporate urban forest assets into the natural asset management plan.

Goal 3. Foster a culture of community care for the urban forest.

Strategy 3.1.   Build community knowledge of and participation in urban forest management.

Strategy 3.2.   Continue to build relationships with W̱SÁNEĆ, Songhees, and Esquimalt First Nations Governments and Indigenous Peoples through urban forest management.

Goal 4. Build on experience and relationships to manage adaptively.

Strategy 4.1.   Seek to fill knowledge gaps that influence confidence in urban forest management.

Strategy 4.2.   Monitor change, report, and adapt management to new information.

Strategy 4.3.   Incorporate current science into decision-making.

6.3 Setting a canopy cover target

Setting targets for urban forest canopy cover is a strategic approach for Saanich to assess the effectiveness of its Urban Forest Strategy implementation. Canopy cover targets can be set and evaluated for individual neighbourhoods and land uses.

Saanich already has a canopy cover target in the form of Council's endorsement of the 3:30:300 Rule as a principle for urban forest management. The "30" in 3:30:300 refers to 30 per cent canopy cover, and the Rule states that everyone should live in a neighbourhood with 30 per cent canopy cover or more. Although not all neighbourhoods meet this target, some have substantially more than 30 per cent canopy, and the District-wide canopy cover in 2019 was 43 per cent. This means 30 per cent should be considered as a base target for Local Areas where 3:30:300 is not currently met. At the District-wide scale and in high canopy neighbourhoods a higher target is appropriate.

Potential change in the urban forest canopy was forecasted to understand the influence of different rates of tree removal, replacement, and planting in Saanich. This analysis was sensitive to development that could occur within Saanich's OCP land uses and due to the provincial housing legislation. The availability of planting sites was also considered in determining the capacity for different areas of Saanich to host additional tree planting; however, in some areas the required planting sites may not exist today and would need to be constructed with the support of tree-friendly design standards and technologies for private development and the public realm.

For any target, monitoring is essential to support decision-making in design, policy, and planning.

SAANICH'S CANOPY COVER TARGET IS 44% CANOPY BY 2064

Saanich's urban growth will result in both tree removal and replanting. Land use designations in the Official Community Plan are the primary input into the Urban Forest Strategy's assessment of potential canopy targets. Each land use supports a generic form and density of development that can be related to potential canopy cover and an average number of trees per hectare (or "tree density"). In many cases, development at higher densities on private property will mean tree retention strategies need flexibility to respond to where trees can best be retained on the site. New planting will need to be accommodated through tree-friendly design principles and supportive tools like planting requirements in the Zoning Bylaw, and streetscape standards in the Subdivision Bylaw.

Table 4. Land uses and target canopy cover

Land Use	Land Area (ha)	Canopy Cover (2019)	Target Canopy Cover (2064)
Industrial Lands	177	31%	31% ↔
Institutional	687	47%	47% ↔
Knowledge Centre	158	30%	30% ↔
Neighbourhood	2,983	31%	35% ↑
Neighbourhood Hub	16	28%	30% ↑
Park	1,468	70%	72% ↑
Primary Growth Area	934	24%	20% ↓
Rural Areas	4,225	46%	46% ↔
Rural Village	18	48%	48% ↔

Increasing canopy cover in most land uses will require significant new planting in streetscapes. Roadways account for 1,300 ha of Saanich's land area. If separated out from the OCP land uses, roadways need to support canopy cover of 34 per cent, eight per cent higher than their 2019 canopy cover average of 26 per cent. Refocusing investment in streetscapes is needed to offset likely tree loss on private property, particularly in the Primary Growth Area and Neighbourhood land uses. Although 34 per cent canopy cover over roadways is much higher than today, many cities with older, established streetscapes can achieve this number. Vancouver's tree canopy over roadways averages over 40 per cent.

When considering the impact of these land use targets at the neighbourhood scale, all neighbourhoods would be able to achieve canopy cover greater than 30% (per the 3-30-300 rule) except Saanich Core. Saanich Core's high proportion of Primary Growth Area land uses make it difficult to reach 30 per cent canopy cover on average across the Local Area by 2064.

6.4 Reaching the canopy cover target in 40 years

To meet the canopy cover target, an estimated 54,000 new (non-replacement) trees in urban areas, not including replacements, will need to be planted across Saanich by 2064. An additional 50,000 understory trees, seedlings and shrubs will be planted into forested areas.

Planting will include 20,000 new trees in streetscapes and 6,000 new trees in parks or elsewhere on District of Saanich property (Figure 27). An additional to 50,000 understory trees, seedlings and shrubs will be planted into forested areas to support succession and regeneration. Planting into private land will include 28,000 new trees, delivered through development requirements and voluntary planting by individuals. To achieve this rate of planting on private property, the District will need the support of a landscape standard under or adjacent to the Zoning Bylaw plus an expansion of the Partnership Tree Program onto private land. Ensuring these trees contribute meaningfully to canopy cover will require considering whether protections under bylaw or through project agreements are needed.

Although understorey planting in natural forests does not always result in a net gain of tree canopy cover, the ecological role of restoration planting by Saanich's natural areas program is important for its conservation and biodiversity value. Understorey planting, when needed, ensures that there is a next generation of trees to replace mature trees over time. The Natural Areas program will plant 50,000 trees and understorey shrubs by 2064, growing this important program.

The planting numbers recommended by the Strategy are ambitious targets with significant implications for the District's urban forest management program. Under current policies and resourcing, the District has been able to plant approximately 200 new (non-replacement) caliper trees per year – less than one third of the planting rate that will be needed on public property.

Increasing tree canopy cover should be prioritized according to the Tree Equity Score, available planting opportunities and the timing of future development or streetscape upgrades that could create new opportunities for tree planting.

Certain Local Areas will receive more tree planting than others. Based on amalgamation of OCP land uses and canopy targets, most Local Areas will need to gain several hectares of tree canopy over the next 40 years (Table 5). Gain required to meet canopy targets in each Local Area was compared with the estimated plantable area.

Areas where required canopy gain is a high proportion of the potentially plantable space (e.g., Carey and Saanich Core) are likely to require significant investments in creating new planting sites to accommodate tree planting.

Table 5. Canopy gain needed to achieve canopy cover targets by land use in each Local Area.

Name	2019 Canopy Area (ha)	Hectares of canopy gain needed	Estimated plantable area (ha)	Required gain as a percent of potentially plantable
Blenkinsop	140	-	88	-
Cadboro Bay	179	-	59	-
Carey	202	132	189	70%
Cordova Bay	316	51	139	37%
Gordon Head	391	43	221	19%
North Quadra	81	19	66	29%
Quadra	184	31	86	36%
Royal Oak	226	7	106	7%
Rural Saanich	2,604	-	480	-
Saanich Core	30	16	25	64%
Shelbourne	105	38	97	39%
Tillicum	89	33	74	45%

Achieving 44% canopy cover by 2064

continued native forest restoration and underplanting 50,000 trees and shrubs

planting 6,000 new park trees

planting 20,000 new street trees

planting 28,000 new landscape and yard trees

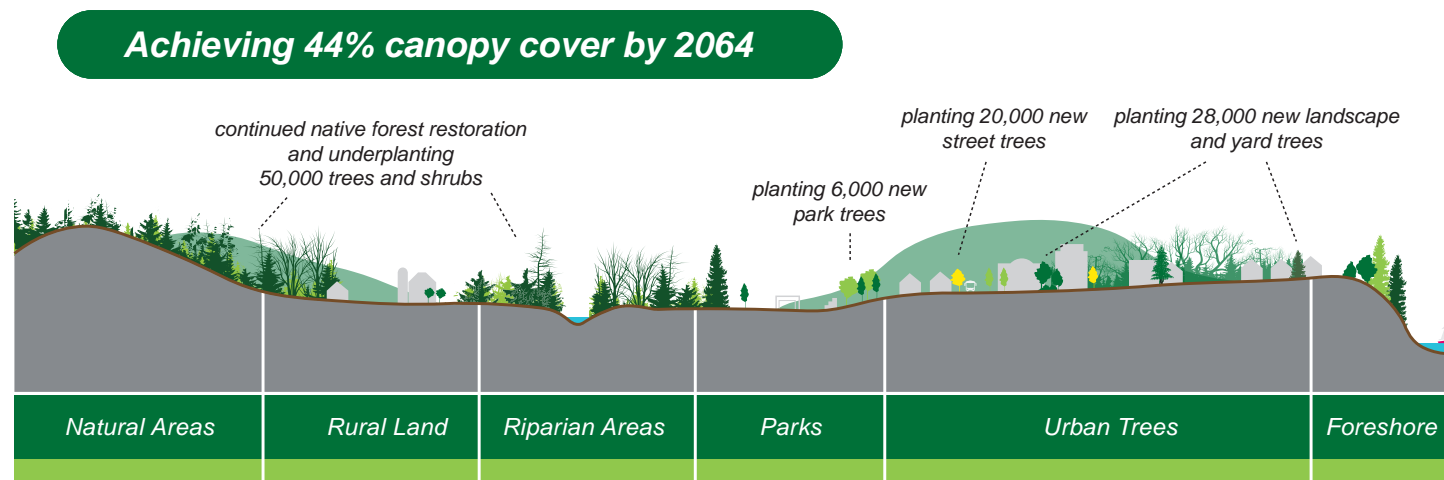Natural Areas | Rural Land | Riparian Areas | Parks | Urban Trees | Foreshore

Figure 27. Where tree planting is planned to achieve the canopy cover target of 44% by 2064.
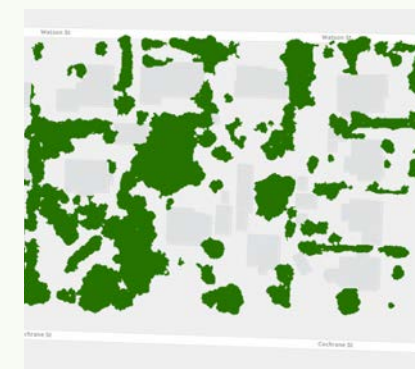
ENVISIONING SUCCESS: WHAT DO CANOPY TARGETS LOOK LIKE?

20%
Primary Growth Area Target
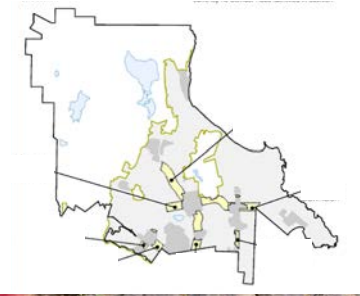

30%
Neighbourhood Hub Target

35%
Neighbourhood Target

ENVISIONING SUCCESS: WHAT COULD STREETS LOOK LIKE?

As part of Urban Forest Strategy development, consultants investigated what Saanich's streets would look like to support 34% canopy cover. The result was that medium-sized trees averaging 12 metre spacing, or large trees averaging 35 m spacing would be sufficient in most streetscapes to pass the threshold canopy cover. Depending on the surrounding land uses, trees in streetscapes may need additional investment in planting site quality to preserve recommended soil volume and water infiltration capacity. Primary Growth Areas are likely to require the highest level of investment in "hardscape" planting techniques, while planting in neighbourhoods will require lower levels of investment. However, there are substantial challenges in routing utilities out of tree planting zones to preserve asset life and service quality that many not be resolved until areas redevelop. The diagrams on these pages illustrate different types of planting site design that can support tree canopy cover in high density areas.

NEIGHBOURHOOD -
BOULEVARD WITH TREES

Precedent Image

Precedent Image

Diverse Large Tree Canopy

Bump Out

Private Residential Frontyard

Grassy Boulevard

+/- 1.8 m   2 m

TREE TYPOLOGIES

25 m/80ft
18 m/60ft
12 m/40ft
6m/20ft
3m/10ft

Shrub   Small   Medium   Large   Extra Large

PRIMARY GROWTH AREA -
HARDENED BOULEVARD WITH SOIL CELLS

Precedent Image

Precedent Image

Diverse Tree Species

Curb Inlet

2 x 2m Open Pit

Soil Cell System

Detention Tank

+/- .6 m

Min. 2 m

Preferred 2.4 m

TREE TYPOLOGIES

25 m/80ft
18 m/60ft
12 m/40ft
6m/20ft
3m/10ft

Shrub   Small   Medium   Large   Extra Large

NEIGHBOURHOOD -
GREEN INFRASTRUCTURE WITH TREES

Precedent Image

Precedent Image

Property Line

Diverse Tree Species

4 x 6m

Bump Out

1.5 m   +/- 1.8 m   2m

TREE TYPOLOGIES

25 m/80ft
18 m/60ft
12 m/40ft
6m/20ft
3m/10ft

Shrub   Small   Medium   Large   Extra Large
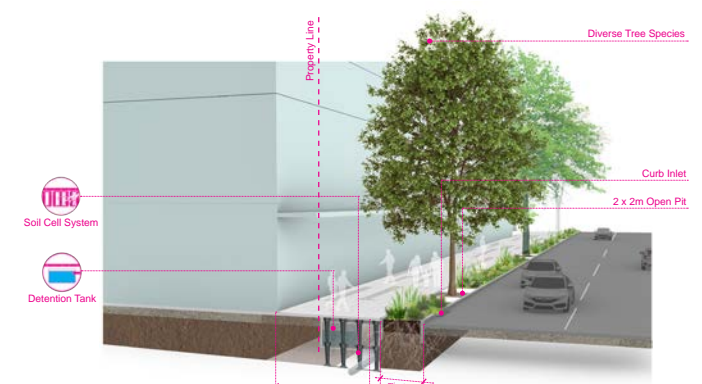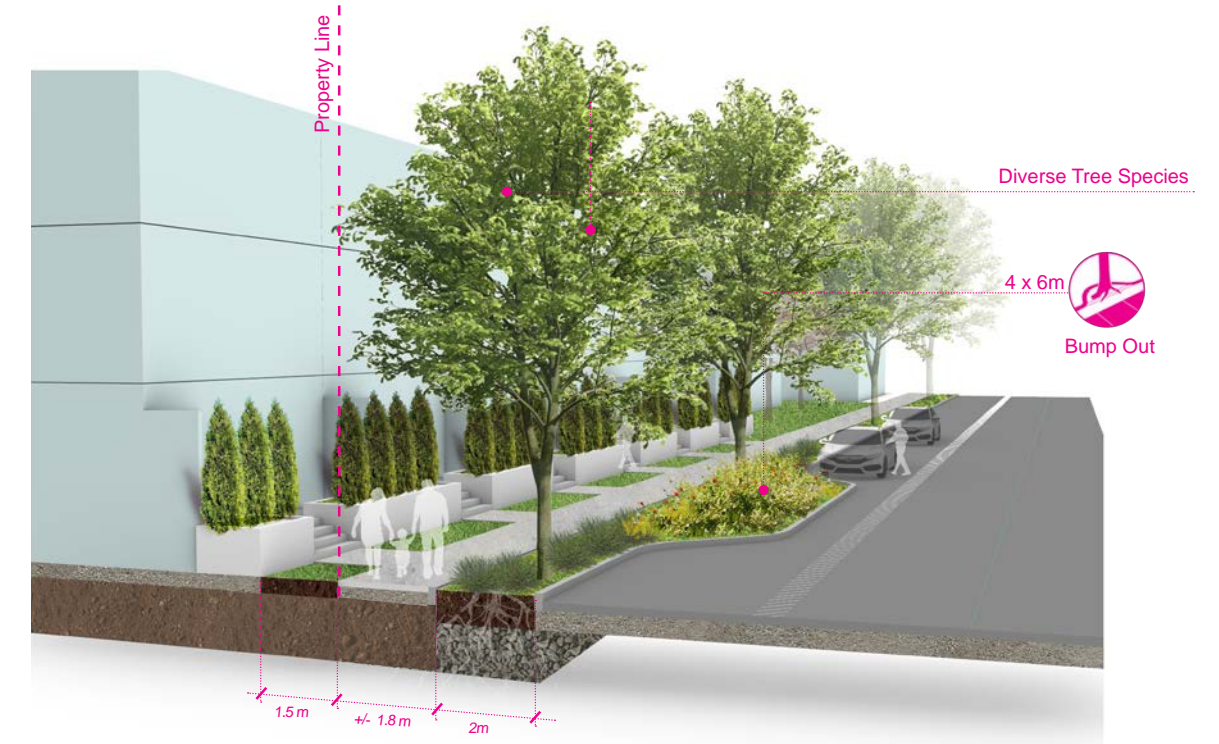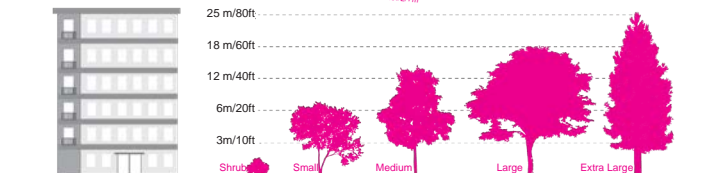
Illustrations by PWL. Diagrams are conceptual references only and specifics should reflect the Development Permit Area Design Guidelins and detailed planning work as it is completed.

6.5 Lessons from other communities

Saanich can learn from the example of many municipalities in BC and elsewhere which are actively facing similar issues with their urban forest management.

PRESERVING TREES

Communities around British Columbia and the world regulate trees on private property through bylaws and local ordinances. Victoria's Tree Protection Bylaw has established a tree density requirement for all properties, requires replacement of all trees removed and credits developments that retain existing forest canopy cover. The City of Kelowna has policies in its Official Community Plan to protect and preserve environmentally sensitive areas by dedicating land as a City park, returning to Crown Land, placing covenants for conservation, incentivizing density transfers or cluster housing, protecting environmentally sensitive areas as amenity contributions with rezoning, and ensuring sufficient setbacks. Kelowna also requires land use and development projects to have "no net loss" of ecosystems confirmed through environmental assessments within environmental development permit areas.

PLANTING TREES

Planting can be a whole-community effort, supported by programs and bylaws. City of Kelowna has run its NeighbourWoods program for over a decade, providing low-cost trees to homeowners for installation in private yards and gardens. The City also requires tree planting on private property through its Zoning Bylaw's landscape standards. The City of New Westminster has accessed funding for disaster mitigation through the Province of British Columbia to plant trees in streetscapes to combat the risks of extreme heat in the urban heat island. Montreal, QC has been partnering with the non-profit SOVERDI and major commercial and institutional landowners to plant over 70,000 trees on private property since 2012.

RESTORING ECOSYSTEMS

Restoring ecosystems unlocks biodiversity value and supports community liveability. City of Surrey's Biodiversity Conservation Strategy maps the Green Infrastructure Network, 3,900 ha of interconnected natural areas, green corridors and open space that provide core habitats and connections between them, while supporting neighbourhood parks and natural areas provision. The Garry Oak Ecosystems Recovery Team, active in Saanich, partners with municipalities around the Salish Sea basin to identify and restore endemic and threatened Garry oak ecosystems.

ASSET MANAGEMENT

York Region, ON, is working towards full accounting of trees and forests on corporate balance sheets. The Region is among the first communities in Canada to assess the compensatory service value of forests. Town of Gibsons is leading small communities in Canada with its natural asset management framework and has implemented stormwater management projects relying on natural forest cover.

MAKING ROOM

Urban trees face most challenging environments in the urban forest, including limited soil volume, soil compaction, and poor drainage. The City of Campbell River integrates tree planting details that include structural soil breakouts and soil channels to connect boulevard planting pits with adjacent permeable soil on private property in new subdivisions. The City of Toronto has created standard drawings for tree planting solutions in hard boulevard surface areas, including suspended pavement systems. The City of North Vancouver's Development Procedures Bylaw allows delegation to staff of minor development variance permits, which include reducing parking minimums to retain mature on-site trees and adequate soil volume.

MANAGING ADAPTIVELY

The City of Seattle is reporting annually on its Urban Forest Management Plan, monitored by a working group called the Core Team with representation from multiple City departments and select external agencies, supported by an independent Urban Forestry Commission with a role to advise government on implementation. Observations from annual progress reports are fed into operational and strategic planning. There are many ways to invite the participation of volunteers and build community through urban forestry. The Town of Oakville, ON, has recruited dedicated volunteers to conduct assessments of forest health for its street tree population, forming a key part of service delivery for this asset class.

CELEBRATING SUCCESS

The City of Victoria's urban forest program exceeds the five core standards required for recognition in the Tree Cities of the World program, a joint initiative by the Arbor Day Foundation and the UN Food and Agriculture Organization to celebrate leaders in urban forestry and provide learning opportunities to a growing network of global peer cities. The city is using its recognition to encourage participation in local stewardship programs and accelerate tree planting.

ȻEN¸IŁȻ
(Garry oak tree)

This deciduous tree is rare in British Columbia but abundant in Saanich, contributing much to the urban forest's unique character. While young trees are often scrubby, older trees grow large, rounded crowns supported by many heavy branches. Old trees have thick, corky bark that makes them resilient to small and low fires. This feature shaped a unique ecological community of ȻEN¸IŁȻ and meadow plants that formerly covered much of Saanich.

PRONUNCIATION

- **Ȼ** is like "ch"
- **E** is like the "a" and "o" in "above"
- **N¸** is similar to the "ng" in "sung", but with a tightness in the throat called a "creaky voice"
- **I** is like "i" in "machine"
- **Ł** is an unfamiliar sound, made by placing the tongue in the position for T and blowing air

Say it like chung-eelth-ch

7 The Action Plan (under development)

The Strategy is a 10-year plan that includes a long-term vision (40 years). The Action Plan will be a detailed set of suggested steps that Saanich could implement to help achieve the Goals, Strategies and Target identified in Section 6. These Actions will be informed by ongoing engagement with staff, residents, and stakeholders. The final version of this Strategy will include a suggested Action Plan. A brief summary of the actions that are being considered under each goal and strategy is provided in this section.

Goal 1. Protect, connect and enhance the urban forest in harmony with built and natural systems.

This goal aims to grow Saanich's urban forest towards the canopy cover target of 44 per cent by 2064, including exceeding 30 per cent in all Local Areas except the Saanich Core. This requires additional resourcing and updating bylaws and policies to support tree retention and planting. This will also mean the District needs to plant 26,000 additional (non-replacement) trees on public property by 2064, work towards supporting 28,000 additional trees planted on private property by 2064, and continue planting in restoration areas (estimated 50,000 trees) and to replace trees that are removed.

Strategy 1.1 Improve policy, regulations, processes and standards for integrating trees and forests into the built environment.

The actions under this strategy will consider how to operationalize urban forest goals and targets through community planning processes and updates to municipal bylaws. Actions will explore updating planning and implementation processes , and municipal bylaws that facilitate tree preservation and landscaping outcomes. Actions will support and build on urban forest focused policies within the Official Community Plan and the Active Transportation Plan.

Strategy 1.2 Expand the urban forest in areas of low tree canopy cover and higher social need.

Under this strategy, actions will focus on how to increase canopy cover in priority areas. Actions may include developing a 10-year planting program towards meeting Council's target of planting 10,000 trees per year for 10 years, inventorying potential planting sites, developing a capital program to retrofit streetscapes with trees, and exploring incentives for private property tree planting.

Strategy 1.3 Improve the quality and suitability of trees being planted for the site and climate requirements in urban locations.

To enhance the quality and suitability of trees planted in Saanich, actions will focus on improving tree planting practices and planting site quality. Actions are expected to address soil conservation, public realm design standards, and selecting tree species and procuring tree stock that is well-adapted to environmental conditions and future climates.

Strategy 1.4 Connect and enhance natural forests.

Actions under this strategy will likely address tree and understory planting in natural forests, and developing maintenance plans for invasive species management and forest health monitoring on District-owned property. Additionally, plans to restore and connect forest ecosystems will be guided by the Biodiversity Conservation Strategy, utilizing strategic public land acquisitions.

Goal 2. Manage the urban forest in alignment with best practices to support healthy and safe trees.

This goal aims to improve practices to maximize the asset lifespan of Saanich trees. Actions will likely address tree inventory and a shift to proactive maintenance achieving a recognized standard such as Tree Cities of the World.

Strategy 2.2 Transition to more proactive urban forest maintenance.

Actions under this strategy will focus on measures to enable proactive management including completing an inventory of urban and park trees, adopting an IT solution for real-time tree inventory updates, developing a tree risk management policy, and setting a defined pruning cycle for street trees, and park trees in high use areas. Other actions may focus on more proactive communication about urban forest management within and outside the organization, such as establishing an interdepartmental working group and pursuing Tree Cities of the World status.

Strategy 2.3 Incorporate urban forest assets into the natural asset management plan.

This strategy will include actions to incorporate trees into natural asset management in Saanich, and a Natural Asset Inventory. Actions will consider integrating a field-based urban tree and natural area inventory with work order systems, tracking lifecycle costs, establishing service levels, setting renewal timeframes, and identifying risks.

Goal 3. Foster a culture of community care for the urban forest.

This goal focuses on communication and engagement to build participation in urban forest management by encouraging stewardship at home and on public property through existing or new programs. Additionally, Saanich is continuing to build relationships with host First Nations, Indigenous communities, and urban Indigenous people to ensure that its urban forest management reflects its commitment to working toward reconciliation.

Strategy 3.1 Build community knowledge of and participation in urban forest management.

The actions under this strategy will focus on developing a comprehensive communication, engagement, and education plan and initiatives to enhance public and partner awareness, update educational materials, expand public participations in urban forest management expand strategic partnerships with local schools, community groups, and NGOs, and incorporate diverse community perspectives to improve access to urban forest benefits.

Strategy 3.2 Continue to build relationships with W̱SÁNEĆ, Songhees, and Esquimalt First Nations Governments and Indigenous Peoples through urban forest management.

The actions in this strategy are expected to address relationship building with the W̱SÁNEĆ, Songhees, and Esquimalt First Nations as it relates to urban forest programs and partnership opportunities. Actions may focus on enhancing the connection between urban forest management and cultural resource use, providing access to culturally relevant materials, and creating opportunities for communities to participate in or direct urban forest initiatives in partnership with the District.

Goal 4. Build on experience and relationships to manage adaptively.

This goal focuses on ensuring that monitoring and adaptive management will underpin the plan to enable actions to be updated in as contexts change. The Strategy is a 10-year plan that includes a long-term vision. The urban forest and land use are dynamic systems that change constantly, and monitoring will be crucial to measure change and assess implementation success.

Strategy 4.1 Seek to fill knowledge gaps that influence confidence in urban forest management.

The actions under this strategy will focus on addressing knowledge gaps in urban forestry. Actions will likely include gathering data to establish baselines for tree mortality, forest health, and regeneration in natural forested areas, alongside continuous monitoring to inform potential management responses like species changes and soil amendments. Actions may also consider trials of new species and planting techniques to compare the cost-effectiveness and success of different approaches ensuring adaptive management based on tangible outcomes.

Strategy 4.2 Monitor change, report, and adapt management to new information.

This strategy focuses on monitoring and reporting timeframes for updates to actions. Actions are likely to address annual progress reporting, and include a five-year review and update cycle for the Urban Forest Strategy actions, aligned with canopy cover data updates.

Strategy 4.3 Incorporate current science into decision-making.

Actions under this strategy will focus on enhancing urban forest management through collaboration and applied research. Actions may consider opportunities to partner with CRD, the Province, the Pacific Forestry Centre, neighboring municipalities, educational and learning institutions, and local nurseries to support and develop projects focused on planting trials using disease and pest-resistant cultivars, native species sourced from warmer climates, and non-invasive species adapted to changing conditions.

7.1 Resourcing

Implementing the Urban Forest Strategy will require significant expansion of capital and operational programs. Resourcing for the priority actions only is estimated to require significant new spending per year at full implementation. Recommendations for developing program resources to support full implementation include:

Recommendation to support implementation
Identify additional staff, equipment, and other resources across departments needed to address gaps in capacity and implement the Urban Forest Strategy.
Ensure annual maintenance budgets are current and account for new assets contributed by development or added through capital projects, such as by preparing a target operating allocation per new tree.
Determine the need for a one-time capital program to address tree risk related to excessive tree mortality in natural areas, such as has impacted western redcedar and grand fir.
Access employment funding, such as the Green Jobs program and Canada Summer Jobs wage subsidies, to employ students and youth over the summer period to provide natural area stewardship capacity, update tree inventory information and complete other projects as needed.
Attempt to secure funding sources for tree planting, such as the 2 Billion Trees Program or other grant programs as they become available to support a stewardship program and more planting on private and public land, collaborating with the Capital Regional District or other governments and institutions where appropriate.

7.2 Monitoring

The Urban Forest Strategy has been updated as Saanich's urban forest faces greater challenges than ever before from changing land use and climate change impacts. There is significant uncertainty surrounding the extent and rate of change in tree canopy in Saanich because this Strategy presents the most detailed map of urban forest canopy in the District yet prepared. In the face of uncertainty, actions in Goal 4 (Monitor) take on specific importance for implementation. The Strategy proposes robust monitoring of urban trees and natural forests support decision-making while also serving as a point of entry for greater community and Indigenous involvement in Saanich's urban forest management. The Strategy should be reviewed at least every five years, with joint reporting with the Biodiversity Conservation Strategy on implementation targets.

While responsibility for implementing the Urban Forest Strategy lies primarily with the District of Saanich, realizing the community's urban forest vision will require widespread participation and involvement from Saanich community members present and future.

Performance Measure	Target	Frequency and method of measurement
Goal 1. Protect, connect and enhance the urban forest in harmony with built and natural systems.		
District-wide canopy cover	44% by 2064, based on meeting targets by land use	Every 5 years, LiDAR remeasurement (or better technology)
Local Area canopy cover minimums	26% in Saanich Core, >30% all other Local Areas by 2064	Every 5 years, LiDAR remeasurement (or better technology)
Tree Equity Score	>89 in all census dissemination areas	Every 5 years, with canopy analysis
Tree planting, public property	26,000 new (non-replacement) trees by 2064	Annually, program records
Tree planting, private property	28,000 new (non-replacement) trees by 2064	Annually, program records
Tree & shrub planting, natural areas/forest understorey	50,000 new (non-replacement) trees by 2064	Annually, program records
Young tree mortality	<1% annual mortality of young planted trees	Annually, site visits
Species suitability	95% of planted species deemed "suitable" for Saanich's future climate	Annually, planting records
Species diversity	Plant no more than 10% of a single species in any year, nor 20% or more of any single genus	Annually, planting records
Area of natural forests	Maintain natural forest cover at 3,700 ha or higher	Every 5 years, with canopy analysis
Goal 2. Manage the urban forest in alignment with best practices to support healthy and safe trees.		
Third party recognition	Achieve Tree Cities of the World Status	Annually, by application
Service levels	Establish a defined pruning cycle	Annually, by work plans
Inventory	Complete inventory of street/plaza trees and landscaped park trees on public property	Annually, by tree inventory records
Asset management	At least 90% inventoried assets represented in asset management system	Annually, by asset management records
	Inventoried tree asset life expectancy is increasing (declining rate of mortality year-over-year among inventoried trees with goal of achieving 1.3% to 1% mortality – 75 to 100 year average life expectancy)	Annually, by tree inventory records
Operating budget	Establish an operating budget allocation per inventoried tree and hectare of natural forest area on public property.	Annually, through budgeting process

Performance Measure	Target	Frequency and method of measurement
Goal 3. Foster a culture of community care for the urban forest.		
Community satisfaction	>50% awareness of UF service levels, and >80% satisfaction among those aware	Bi-annually, through community Parks and Recreation Survey
DRIPA	Align urban forest management with provincial legislation	Annually, through program review
Goal 4. Build on experience and relationships to manage adaptively.		
Reporting	Report annually on urban forest management outcomes	Annually, through Council/public presentation
Tree mortality, natural areas	Overstorey tree mortality is less than 2% based on LiDAR assessment or plot surveys	Every five years, with canopy analysis
Partnership agreements	At least one partnership agreement is in place with a community partner for special programs or projects.	Annually, program records

7.3 Concluding Remarks

Saanich's Urban Forest Strategy update provides a 10-year implementation plan with a 40-year vision to achieve a thriving, interconnected system of trees and forests across the municipality. The Strategy incorporates scientific research and best practices in urban forest management to support the sustainable enhancement and maintenance of Saanich's urban forest. While the District plays a large role in managing the urban forest, community involvement is essential for the long-term management of these natural assets.

New District initiatives and emerging challenges, such as development pressures, climate change, and the need for greater social equity and reconciliation, create both challenges and opportunities for enhancing the urban forest. Opportunities include improving planting sites, diversifying the tree population, and recognizing the connection between forest management and Indigenous knowledge. Saanich is committed to navigating these challenges and harnessing opportunities through the implementation of this plan over the coming decade.

Through dedicated stewardship, strategic management, and inclusive community engagement, Saanich's urban forest is envisioned to be a resilient and valued asset, delivering essential ecosystem services for current and future generations.

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