PARKS+

A Civic Endowment Fund for Nature

April 2026

Prepared for:
Ombrello Solutions

OMBRELLO

PARKS+

A Civic Endowment Fund for Nature

PL8110: Advanced Planning Studio

School of Urban and Regional Planning

Toronto Metropolitan University

Date: April 15, 2026

Client: Ombrello Solutions — Anastasia Mourogova Millin, Founder; Jeremy Guth, Board Director

Supervisor: Nina-Marie Lister, MCIP, RPP, Hon ASLA, Hon OALA

Mentor: Ombrello Solutions — Jean-François Obregon Murillo, Head of Research & Financial Analysis

Prepared by:

Amaan Jabbar, Hons. B.A. Urban Studies

Bruno De Marinis, Hons. B.A. Urban Studies

Calvin Onate, Spec. Hons. B. Sc. Environmental Sciences

Greg Aneziris, Hons. B.A. Biology

Liam Ryan, Spec. Hons. B.A. Geography and Urban Studies

Riley Locke, Hons. B.A. Political Science and Communication Studies

ACKNOWLEDGEMENTS

Thank you to our client team at Ombrello Solutions Anastasia Mourogova, Jeremy Guth and, Jean-Francois Obregon Murillo for providing valuable direction, collaboration, and the opportunity to engage with a meaningful project. Thank you to Professor Nina-Marie Lister for her guidance, supervision, and dedication to our success.

We are also grateful for the opportunity to learn from and engage with Andres Jimenez Monge and Jenna Quin on behalf of Ontario Nature and the Thickson community. Their work and perspective helped us ground the project in real world environmental and governance contexts.

Special thanks to Northcrest Developments at YZD, particularly Jeff Ranson, for his contributions and helping us better understand the complexities of large scale urban development.

Finally, thank you to Matt Canaran and the Friends of Allan Gardens for their passion, advocacy, and commitment to urban green spaces, which helped inform and inspire key elements of this work.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This report presents the PARKS+ model as an integrated governance and financing framework to support the delivery, expansion, and long-term sustainability of urban park systems in the context of intensifying cities. Grounded in Toronto's planning context, the project responds to increasing pressures on land, infrastructure, and ecological systems by positioning parks as critical components of urban infrastructure that deliver ecosystem services and measurable environmental performance.

The PARKS+ report develops a governance model for a Civic Endowment Fund for nature. This work is intended to inform and support urban planning for biodiversity through the creation and maintenance of abundant, accessible, biodiverse, connected, and protected parks. This objective establishes the foundation of the report and frames parks as systems that must be planned, financed, and governed in relation to ecological function and long-term environmental performance.

The analysis identifies key limitations in existing park delivery tools in rapidly growing urban areas. Mechanisms such as parkland dedication and cash in lieu are increasingly constrained by land availability and cost, particularly in areas targeted for intensification. At the same time, cities are experiencing growing environmental pressures including urban heat island conditions, increased stormwater runoff, and flood risk, along with the continued loss of urban habitat. These challenges reinforce the need to understand parks as infrastructure systems that contribute to climate adaptation and environmental stability rather than as residual land uses. Ombrello Solutions introduced financial mechanisms to support both the delivery and long-term operation of park systems by capitalizing on the Nature Premium concept. The Civic Infrastructure Bond is used to generate upfront capital for park acquisition and development, allowing for early intervention in areas undergoing growth. The Civic Endowment Fund supports ongoing maintenance and system performance, ensuring that parks continue to function in accordance with both private and public goals. This creates a direct relationship between financial inputs, ecological outcomes, and community resilience over time.

Secondary source research, conducted through a literature review, situates the report within broader discussions of parks planning, ecological asset determinants, precedent analysis, policy review, and governance model assessment. A range of governance approaches, including conservation organizations, public agencies, and institutional investment structures, were analyzed to identify relevant practices for biodiversity stewardship, effective governance, and appropriate oversight and expertise. Out of this research, governance principles, a governance board framework, and key performance indicators (KPIs) were developed and used to communicate the effect of the PARKS+ model.

Seven governance principles were derived from the literature review to ground the

PARKS+ model in established concepts of good governance. They serve as a foundational set of tools to integrate biodiverse park planning, financial responsibility, and community engagement within a singular governance framework. The proposed governance board comprises seven semi-fluid seats that bring together expertise in environmental planning and biodiversity, Indigenous perspectives, financial investment, local business, municipal governance, and community interests. These roles integrate knowledge on habitat creation, ecological performance, capital strategy, land use, law, and broader urban systems to guide coordinated, long-term decision-making. The proposed KPIs address biodiversity, landscape connectivity, climate resiliency, mental and physiological health, and community building. This composition ensures that governance decisions comprehensively monitor all goals of the PARKS+ model to ultimately realize the perpetual function of parks.

The report applies the PARKS+ model to the Downsview Airport Lands, also referred to as YZD. This large-scale redevelopment area provides a context in which the governance principles, governance board, and KPIs can be stress-tested against a real-world site. This section demonstrates that the governance principles help mitigate pressures from the developer, the governance board reflects the local community context, and the KPIs provide comprehensive monitoring as the site evolves while aligning with existing development goals.

Across the report, parks are consistently understood as vital, but underfunded environmental systems that provide critical ecosystem services within the urban landscape. These include moderating temperature, managing water, improving air quality, improving bodily health, and supporting biodiversity. By linking these functions to governance and financial structures, the PARKS+ model proposes a structured and scalable framework to support the delivery and long-term function of park systems as essential urban infrastructure.


© Maridav

1.0 INTRODUCTION

Nature serves as the backbone of our economy, yet natural assets are frequently ignored in private and public sector financial analysis (Eyquem et al., 2022; Costanza et al, 1998). There is a systemic lack of investment in nature-based solutions that protect, manage, or restore ecosystems, despite the significant human benefits they provide (United Nations, 2021; International Union for Conservation of Nature, 2020).

Urban parks can function as nature-based solutions delivering ecosystem services (Wolch et al., 2014); however, many cities lack the resources to deliver these at scale due to constraints such as limited budgets and revenue tools (Park People, 2023). As a result, cities such as Toronto face a shortage of park space. The City of Toronto's 2022 *Parkland Strategy Refresh* reports approximately 28 square metres of parkland per resident (City of Toronto, 2022), compared to nearly 60 square metres in cities like Berlin and Vienna (Laan & Piersma, 2021). Moreover, these figures do not account for the fact that urban parks often lack crucial ecological components that deliver key benefits to humans and the environment, including biodiversity, opportunities for wildlife encounters, terrain variation, and large contiguous landscapes (Lev et al., 2020).

1.1 The Solution

Ombrello Solutions is a nonprofit organization developing innovative financial instruments to mobilize capital and address pressing issues in our cities. To this end, Ombrello Solutions has developed the Civic Infrastructure Bond (CIB). The CIB is an investment tool designed to channel large-scale private, institutional capital into nature-based solutions and biodiverse assets in Canadian cities (see Figure 1). It serves as a response to the systemic lack of investment in nature-based solutions in both the private and public sectors.

The CIB, as a financial mechanism, seeks to leverage real estate value uplift generated through the Nature Premium, referring to the increase in property values resulting from the capitalization of proximity to nature, a concept well documented in academic literature. For example, Crompton (2001) found that high-quality park spaces, and the ecological amenities they provide, generate property value uplift up to 20%, with the strongest uplift within 500-600 metres.

The CIB begins with $250 million in initial capital from institutional investors and is invested in a mix of assets. It helps finance the acquisition of land for the restoration or development of biodiverse assets, which are then transferred to the Civic Endowment Fund (CEF) to manage, maintain, and steward in perpetuity under a model of community ownership and governance. The CIB makes strategic real estate investments through a Smart Civic Covenant (SCC), which is registered on the title of properties, and ensures that a portion of the property value uplift generated through the Nature Premium can

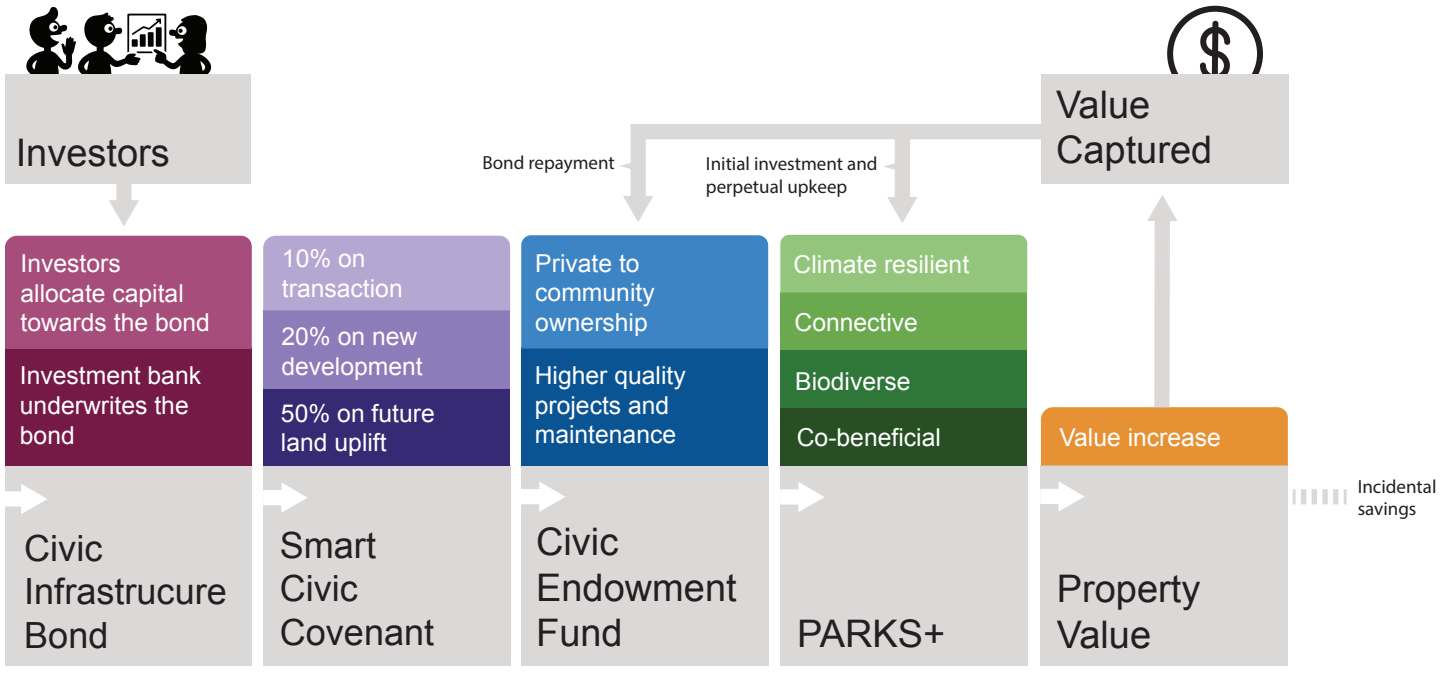


Figure 1. A high-level representation of the financial model fuelling PARKS+.

continue to be captured in perpetuity over time. These gains are realized and captured every time a property is either sold or refinanced. The captured share of these gains varies based on property type.

- For existing properties, 10% of the value uplift is captured every time there is a transaction on title.

- For new developments, 20% of the value uplift is captured upon construction completion, secured by a lien on the property, and 10% of the uplift is captured on every transaction on title going forward.

- On land, 50% of the future land value uplift (as calculated per Gross Floor Area) is captured every time there is a transaction on title.

The cash flow generated from property value uplift serves two purposes:

(1) To repay bond holders at the designated coupon rate over a 30 year period.

(2) To support the CEF in governing and stewarding the biodiverse asset and enabling community development in perpetuity.

Through this cycle, ecological benefits enhance property values, and realized gains continue to fund the CEF, thus ensuring that ecological and fiscal sustainability work together to deliver ecological resilience, ecosystem services, and community benefits in perpetuity.

© Michael Connor Photo

1.2 The PARKS+ Project

This report is a synthesis of interdisciplinary literature aimed at informing the development of a governance model for the CEF that delivers ecological parks and biodiverse assets within cities through the CIB, while remaining financially viable and community-oriented.

The PARKS+ project objective developed as it progressed to answer the primary research question:

> How can a CEF capture and reinvest the value generated by nature to steward biodiverse parks in perpetuity and at scale?

The methodology used to answer the research question was shaped by qualitative research, which aided the team's understanding on the concepts of the Nature Premium and the CIB financial mechanism, and the idea of good governance over the relationship of biodiverse assets. This led the PARKS+ team to establish the following research goal:

> Design a governance model using Ombrello Solution' CEF model that captures and reinvests the value generated by nature to steward biodiverse parks in perpetuity and at scale.

1.2.1 Project Delivery

To develop the governance model, an extensive literature review was conducted, supplemented and refined by informal interviews with three organizations relevant to the PARKS+ model: Northcrest Developments, Ontario Nature, and Friends of Allan Gardens. This methodological approach helped propel the project into its subsequent analysis phase.

The analysis between the pillars of the Nature Premium, Ombrello Solutions' proposed financial mechanism, and governance modelling led to the creation of the PARKS+ seven governing principals, seven seat governance board, and twenty-seven key performance indicators (KPIs), dubbed perpetuity tools.

1.2.1.1 Governance Principles

The PARKS+ governance principles propose that park governance be guided by long-term vision, biodiverse stewardship, community-centred impact, perpetual protection, responsible financial stewardship and bond repayment, value recapture and community reinvestment, and transparent and representative governance.

1.2.1.2 Governance Board

The PARKS+ governance board proposes that governance decisions be made by a board balancing long-term financial, covenant holder, environmental, community, Indigenous, municipal, and local business interests. The inclusion of these seats is justified based on projected expertise, authority, selection process, sitting term, and voting power. The goal of the PARKS+ board is to align ecological, financial, and community objectives while remaining adaptable to evolving stakeholder priorities over time.

1.2.1.3 Perpetuity Tools

The Perpetuity Tools are a set of KPIs that are included to help the PARKS+ governance board identify and prioritize biodiverse assets to uphold the ecological value of the Nature Premium such that involved parties can benefit through the CEF indefinitely. The KPIs are

numerous, but they address six categories vital to the long-term success of parks under the model: biodiversity, connectivity, climate resiliency, mental health, physiological health, and community building.

1.2.1.4 Application

To test the applicability of the PARKS+ governance model, a matrix was developed and applied to three sites: YZD, Thickson's Woods, and Allan Gardens. It includes seven points of criterium:

(1) Nature-Based Infrastructure
(2) Biophilic Assets
(3) Private Property
(4) Development Pipeline
(5) Extended Community
(6) Immediate Community
(7) Immediate Others

This criteria represents the culmination of all relevant considerations into what will uphold the values of biodiversity and ecological connectivity, while simultaneously addressing necessary components to the function of the CEF mechanism. These are characteristics that PARKS+ recommends to be considered when forming a governance board with the CEF, as they most strongly influence the feasibility and value return of a PARKS+ application.

To further demonstrate the applicability of PARKS+, YZD was selected as the site to situate the governance principles, governance board, and perpetuity tools in a real-world context.

The following report delves into the research needed to make informed recommendations on the structures of PARKS+ governance.

2.0 METHODS

This research adopts a primarily qualitative approach, engaging heavily in the exploration of existing research and literature. The research is guided by the question: how can a civic endowment fund capture and reinvest the value generated by the Nature Premium to steward biodiverse parks in perpetuity and at scale? In doing so, the research proposes actionable recommendations for a governance model that leverages the Nature Premium to steward biodiverse parks in perpetuity and at scale. These recommendations are grounded in a literature review of parks planning, ecological assets, and governance structures. In Section 4.0, titled Governance Analysis, specialized and heavy emphasis was placed on governance model case studies to establish precedent and identify key elements of effective governance. To ground the recommendations in real-world application, the PARKS+ model was further elucidated through exploratory discussions with relevant organizations and then judged against three select real-world sites, before proceeding in depth with one.

2.1 Literature Review

The literature review, as a strategic data collection process, involved identifying relevant sources, systematically screening them for inclusion criteria, and refining the research focus (Snyder, 2019). The foundations for the PARKS+ governance model are thus placed upon an extensive bed of secondary source research.

2.1.1 Scoping

The research team was provided a preliminary list of sources relevant to the topic to better define the scope of literature. These sources were categorized by the research team into three broad categories:

(1) Parks planning
(2) Ecological assets
(3) Governance structures

To further refine the research scope, inclusion criteria were applied to assess whether sources should be incorporated into the study and to identify their relevance and contribution (Machi & McEvoy, 2016). This resulted in the following research categories:

(1) Criteria for a park
(2) Criteria for an ecological asset
(3) Landscape connectivity
(4) Ecosystem services
(5) Climate adaptivity
(6) Trusts/funds/foundations
(7) Conservancies
(8) Fiduciaries
(9) Charities
(10) Advisory committees/voting boards
(11) Community engagement

2.1.2 Search Strategy

The search strategy followed best practice guidelines by including specifications for search terms, data sources, and application of inclusion and exclusion criteria (Snyder, 2019). Building on the scoping results, a standardized set of research descriptors was developed. These key descriptors were then combined using the Boolean operators “AND”,

"OR", and "NOT" to construct precise search queries (Machi & McEvoy, 2016). Complementing the search term criteria, a data source criterion for reputability was applied, including scholarly journals, government publications and reports, internal organizational documents, not-for-profit organization materials, working papers, institutional research reports, and developer reports. To systematically manage the sources, they were categorized in a master source chart by Title, Author/ Publisher, Date, Link, and Scoping Typology (see Appendix A).

2.2 Exploratory Discussion

As the recommendations for the PARKS+ governance model were developed, the research team engaged in exploratory discussions with Northcrest Developments, Ontario Nature, and the Friends of Allan Gardens to review and refine preliminary findings. With Northcrest Developments, the application of the model to the YZD Runway project was discussed in a virtual meeting; with Ontario Nature, the model's application to Thickson's Woods was explored; and the Friends of Allan Gardens considered the model's relevance to Allan Gardens during a site visit.

2.3 Analytical Process

To understand and evaluate the complexity of the research material, analytical rigour was utilized (van Riel & Snyder, 2024). Analysis of the literature review and application of governance structures led to the formation of two teams: one focused on the ecological aspects of the PARKS+ governance model and the other on the actual structures of governance for the model. The ecology team reviewed literature on park functions, the benefits of biodiverse assets for individuals and infrastructure, and biodiversity makeup at both landscape and site scales. The governance structures team reviewed literature on good governance principles and practices, as well as different models applied in multi-stakeholder engagement contexts.

Although the groups were nominally separate, collaboration was standard, which enabled complementary specialization and peer review. To gain feedback on our analysis, the research team met frequently with Ombrello Solutions, our mentor, and supervisor. These meetings provided opportunities to rethink our approach and clarify our recommendations for the PARKS+ governance model.

2.3.1 Governance Principles

A review of academic and grey literature was conducted to identify good governance principles and practices based on the goals the governance model seeks to achieve. Namely, representing a diverse range of stakeholders and interest groups, which involves advancing the Nature Premium to deliver the range of ecological and human benefits. Through the literature review, important elements of a governance model were identified and elaborated, and recommendations were formed with reference to the literature. The findings were then iteratively presented to the full research team and client, and subsequently refined into the current seven governance principles (see Appendix B).

2.3.2 Governance Board

Drawing on the literature review of trusts, funds, foundations, charities, conservancies, fiduciaries, advisory committees/voting boards, and community engagement, recommendations

were developed for the elements of a PARKS+ governance board. This illustrated what backgrounds were important in board trustees, the extent of their authority, their appointment process, sitting term, and voting prowess. The findings were iteratively presented to the full research team and client, and then turned into the current seven seat framework (see Appendix B).

2.3.3 Perpetuity Tools

Based on a literature review of ecosystem services, landscape connectivity, and community engagement, a list of recommended KPIs were developed to guide the perpetual stewardship of parks under the PARKS+ model. The KPIs were then critiqued by the research team and client for feedback. Through these KPIs, natural assets are emphasized as investments for personal, community, and infrastructural benefit, as well as tools for preserving and growing urban biodiversity.

2.3.4 Real-World Application

Findings from the entire literature review were synthesized into an applicability matrix used to evaluate the alignment of the PARKS+ model across three real-world sites: YZD, Thickson's Woods, and Allan Gardens. Furthermore, the proposed governance principles, board structure, and perpetuity tools were applied at a high level to YZD to ascertain their feasibility in practice.

3.0 LITERATURE REVIEW

3.1 The Nature of Parks

Currently, parks take many forms, each shaped by diverse social, ecological, and cultural goals and valued for the different opportunities they provide to communities, both immediate and extended. There are few broad categories parks can fall into (see Figure 2).

3.1.1 Conservation Space

National and provincial parks hold significant cultural prominence for many people. They are the cornerstone of efforts to protect biodiversity (Timko & Satterfield, 2008). At the same time, they navigate the challenges of balancing ecological and social objectives, aiming to protect ecosystems while fostering positive relationships with local communities (Timko & Satterfield, 2008). It is important to note that national and provincial parks are not always purely “natural.” Banff National Park exemplifies this, because while often seen as a natural landscape, the reality is that the park is still a human construct. Its boundaries are projected onto the land and are shaped by historical, political, and economic forces (Mayer et al., 2023).

3.1.2 Rehabilitated Space

Restored or rewilded parks are increasingly valued for their ability to support the return of biodiversity and the provision of ecosystem services. Nature conservation has traditionally been associated with relatively pristine spaces outside major urban centres (Kaae et al., 2019). However, increasing global urbanization has shifted attention toward urban nature—to sites like restored brownfields, urban parks, street trees, and urban waterways (Kaae et al., 2019). Nature Park Amager in Copenhagen exemplifies this reorientation of interest, as it offers an urban ecotourism experience within a restored “novel” ecosystem easily reached by public transit (Kaae et al., 2019). Toronto is home to one of the world’s largest restored park projects: the Port Lands Flood Protection Project, which incorporates flood-safe parks within a naturalized river valley (Waterfront Toronto, n.d.a).

3.1.3 Escapist Space

Urban forests are valued for their ability to provide a sense of escape from the city while remaining embedded within the urban environment. As accessible natural spaces, they offer opportunities for recreation, restoration, and everyday interaction with nature (Salak et al., 2026). Research suggests that visitors generally prefer landscapes that balance naturalness with moderate levels of management. Forests, understood as relatively wild, are often appreciated for their sense of natural purity and ecological richness. However, these perceptions are not universal. Socio-cultural and regional contexts influence how users interpret forest landscapes and their management (Salak et al., 2026).

3.1.4 Generational Space

Parks can be playgrounds, being prized for their

communal and recreational values. Research suggests that opportunities for social interaction are a significant aspect of playground use for both children and adults (Refshauge et al., 2012). Beyond recreation, playgrounds can also function as cultural spaces that reflect evolving design approaches to play. When thoughtfully designed, they reflect cultural priorities and histories while continuing to support children's recreational needs (Cartiere, 2022).

3.1.5 Negotiated Space

Fully urbanized parks, such as city squares and plazas, are valued for their cultural relevance and accessibility within dense urban environments. Emerging from this is their interaction with varying power structures and publics (Kahraman & Türkoğlu, 2022). These spaces possess a long history of functioning as stages for political expression and contestation. They act as spaces where diverse groups can negotiate authority visibly and loudly. Beyond their political face, urbanized parks are sites of gathering and everyday interaction. Their cultural, political, and historical significance is inseparable from their spatial and physical form (Kahraman & Türkoğlu, 2022).

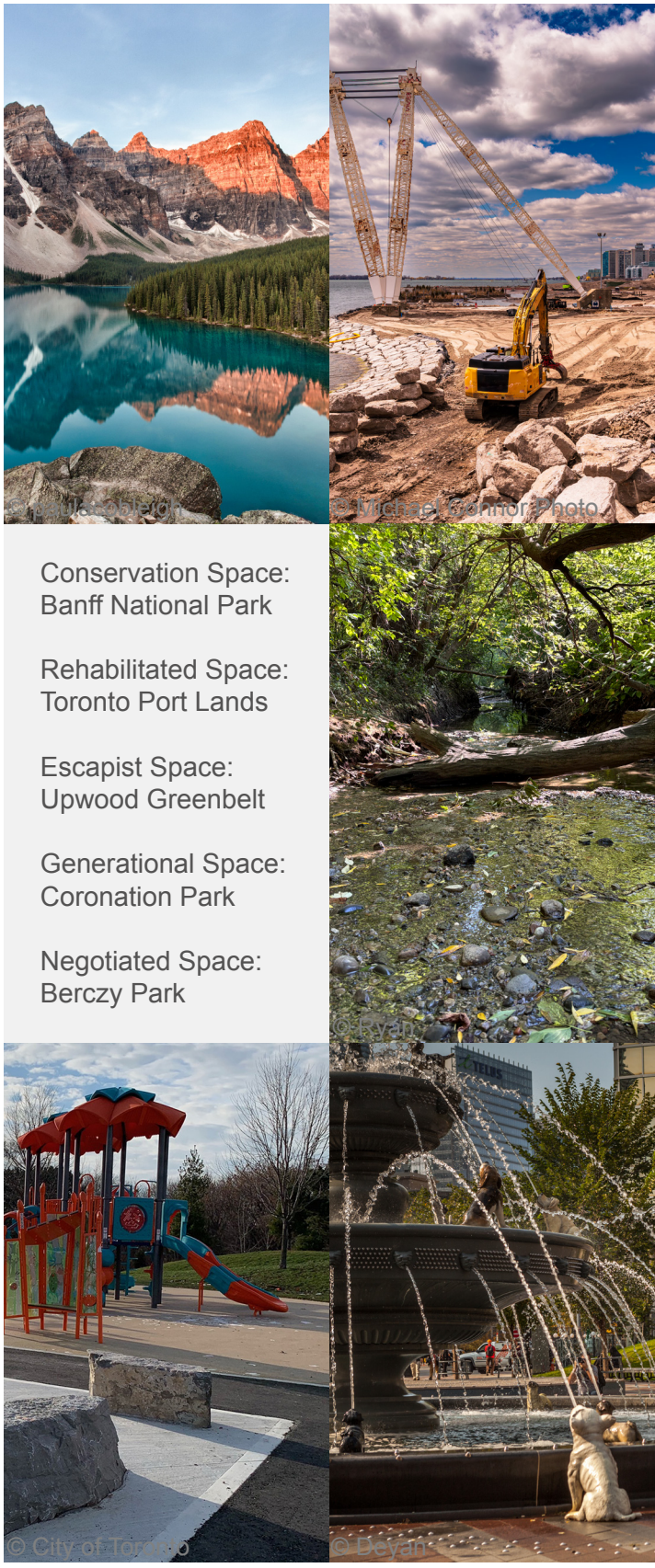


Figure 2. Parks come in many shapes, sizes, and purposes.

3.2 The Problem With Parks

Despite the proven ecological, social, and political value of parks, there appears to be a deficit in their function and form, particularly in cities (see Figure 3).

3.2.1 Urban Biodiversity and Fiscal Gaps

Cultural preferences for manicured lawns and restrictive ordinances are ingrained in park culture (Beatley, 2020b), subtly reinforcing the idea that parks should be ecologically low-functioning landscapes inherited from colonial and suburban planning ideals (Lister & Careri, 2025). This perspective greatly limits our imagination and realization of native landscapes (Beatley, 2020b).

Known as a city within a park (City of Toronto, 2019), Toronto appears to subscribe to a very similar definition of a park. In a section titled *Why We Do It*, the City of Toronto's Parks and Recreation division summarizes its vision of parks as follows: "Parks and Recreation ensures that our recreation centres, programs, parks, trails, playing fields and courts, ice rinks, and pools are safe, accessible, vibrant, and continually evolving to meet the needs of a growing city" (BudgetTO, 2026, p.1). In this definition, it is either implied or overlooked that cities are inhabited by life beyond humans and, as such, signifies a gap in planning for other species. Biodiversity-based responses are vital in addressing these misconceptions because they provide co-benefits for health, society, and the environment (Chan et al., 2021). Based on the City's current development pipeline (see Figure 4), if no new parkland is acquired, overall city-wide parkland provision is expected to decrease by 14% by 2033 (City of Toronto, 2019, p.27). This is particularly concerning, as municipalities are asked to do more with less, meaning parks are influenced greatly by funding scarcity (Boulton & Dedekorkut-Howes, 2024).

Declining funding, coupled with rapid urban growth, is straining cities' capacity to provide safe, healthy, and accessible parks. In Toronto, this pressure is reflected ecologically: a comparison of species data from 1977 to 2017 shows widespread declines in native trees, wildflowers, birds, and mammals within the ravine network, alongside an increase in invasive species (Davies et al., 2018). These environmental changes are closely tied to issues of equity. In many cities, low-income and racialized communities have disproportionately limited access to safe and well-maintained green spaces. This inequity increases their exposure to harmful environmental conditions (Wolch et al., 2014; Smardon et al., 2018).

Figure 3. Many parks, like Christie Pits, have low ecological value and are recreation-based.

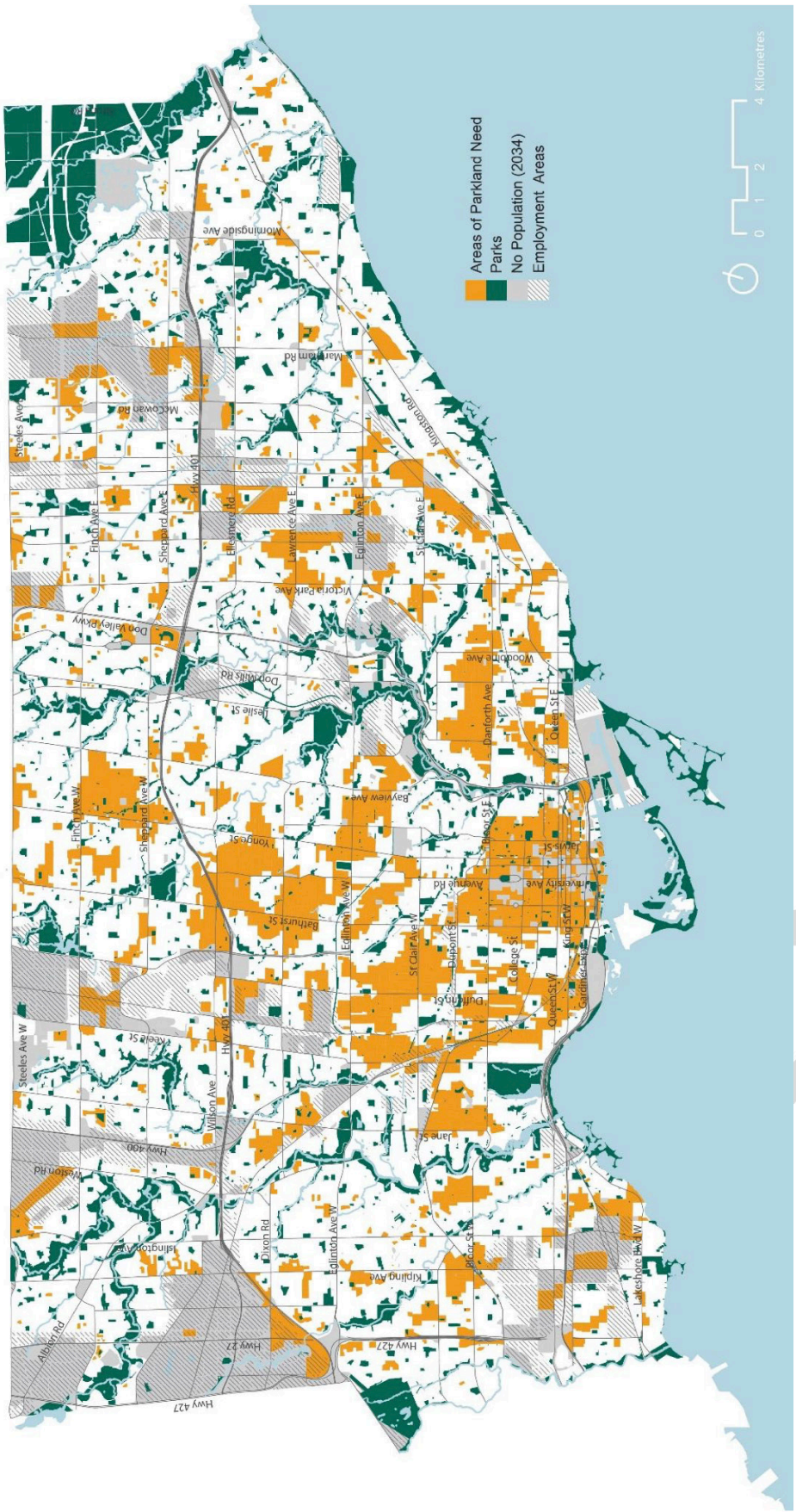


Figure 18 – Parkland Study and Acquisition Priority Map (2021)

Figure 4. Toronto is currently in a park deficit (City of Toronto, 2022).

3.3 Ecological Parks to the Rescue

Ecological parks are co-beneficial, meaning that investments in biodiversity support both human and non-human life.

3.3.1 Health Benefits

Parks provide opportunities for social interactions and the development of social ties (Kaźmierczak, 2013). This social function provides ample mental and physiological health benefits, as evidence suggests that individuals with strong social relationships have a 50 percent lower mortality rate than individuals with few social relationships (Hold-Lundstad et al., 2010).

3.3.1.1 Mental Health

A consistent theme across the literature is that everyday contact with nature can support mental health. Research in this area is often grounded in three foundational theoretical frameworks. Attention Restoration Theory (ART) suggests that contact with nature has a restorative effect, reducing mental fatigue by replenishing mental resources (Kaplan, 1995; Mason et al., 2022). Stress Reduction Theory (SRT) argues that natural environments help trigger a calming response that alleviates stress (Ulrich et al., 1991). In fact, the literature shows that without access to nature, people's mental state can decline (Shuda et al., 2020). The Biophilia Hypothesis argues that humans have an inherent predisposition to seek connections with nature and living systems (Wilson, 1993).

Building on these conceptual lenses, empirical research has examined mental health outcomes across multiple measures of exposure, from time spent in nature, to park access and greenspace quality. In England, a study found that spending at least 120 minutes in natural environments, including urban open greenspaces, such as parks, was associated with better self-reported health and well-being (White et al., 2019). A study in New York City linked park proximity with fewer poor mental health days through increased park use (Orstad et al., 2020). At a broader scale, meta-analysis found lower levels of common psychiatric disorders, including depression and anxiety, with greater greenspace exposure (Zhang et al., 2024). Finally, research on the quality of urban green space suggests psychological benefits can increase with biodiversity, pointing to ecological richness as part of what makes nature restorative (Fuller et al., 2007).

3.3.1.2 Physiological Health

Beyond positive mental health outcomes, research also links urban greenspace to a wide range of broader health benefits. A systematic review and meta-analysis examining greenspace exposure and cardiometabolic risk factors (such as obesity, hypertension, blood glucose, and lipid profiles), which are recognized as precursors to cardiovascular disease, found that greater access to greenspaces was associated with healthier cardiometabolic profiles (Sharifi et al., 2024). Other reviews of urban greenspace and health have also reported consistent associations between high levels of greenspace exposure and reduced odds of mortality, including cardiovascular and respiratory causes of death (Kondo et al., 2018). Research also suggests that the ecological characteristics of urban forests may have a positive impact on human health. A study examining street-tree biodiversity found that higher levels of urban forest diversity were associated with lower mortality rates from cardiovascular disease, including heart disease and stroke (Giacinto

et al., 2021). Evidence from large-scale urban tree loss has similarly shown increases in cardiovascular and respiratory mortality following declines in canopy cover, highlighting the potential public health role of urban vegetation (Donovan et al., 2013).

3.3.2 Infrastructural Benefits

The benefits of ecological parks extend beyond the individual to physical infrastructure, influencing the lives of people, buildings, communities, and entire cities.

3.3.2.1 Stormwater Management

Ecological infrastructure, both artificial and natural, can support biodiversity while providing economic and protective benefits (van Rees et al., 2023). Preserving natural drainage lines, such as streams, maintains pre-development water balance, manages excess runoff, and supports connected green corridors (Parris et al., 2018). In the United States, natural watershed protection, green stormwater infrastructure, and floodplain restoration generate billions in cost savings, offering cost-effective alternatives to levee repairs while strengthening urban flood protection (van Rees et al., 2023). The Chinese sponge city model uses porous materials and parks-turned-reservoirs to support diverse plant and animal species while filtering stormwater (Lehmann, 2021). Similarly, the Hillcrest natural garden demonstrates how ecologically designed landscapes can retain and filter stormwater along public boulevards (Lister & Careri, 2024). Cities with high impervious surface coverage, such as Bangkok, frequently struggle with urban flooding. Centenary Park, the city's first new public park in over three decades, added 11 acres of wetland greenspace to help mitigate flood risks (Lehmann, 2021).

3.3.2.2 Water Quality Management

Biodiverse infrastructure, such as bioswales, filters surface runoff, keeping water clean and healthy (Lehmann, 2021). Natural meadow systems similarly reduce nutrient runoff and soil contamination risks (Paudel et al., 2025). In contrast, turf lawns contain elevated levels of N, P, K, and toxic metals, increasing the risk of leaching into ground and surface water (Paudel et al., 2025). Wu et al. (2024) found that bioswales generated greater concern than turf-based swales regarding pests, appearance, pollutant accumulation, children's safety, and potential impacts on home value—likely due to 'chaotic' vegetation and lower visibility. These concerns, however, are largely tied to maintenance and education gaps, which can be addressed (Wu et al., 2024). From an economic perspective, investments in biodiverse water-filtering assets remain cost-effective. For instance, New York's $660 million environmental bond for natural water purification services achieved payback in 5–7 years while providing additional flood protection at no extra cost (Salzman, 1997). Houtan Park in Shanghai, developed in 2010 by Turenscape, uses 93 plant species to clean up to 634,000 gallons of polluted river water daily, saving approximately $116,800 per year in water costs at the adjacent Expo Park (Rottle et al., 2011).

3.3.2.3 Erosion Control

Soil erosion contributes significantly to sediment pollution, which in turn, can reduce aesthetic and conservation values, impair hydroelectric infrastructure, increase flood-related damages, and raise water-treatment costs (Paterson et al., 1993). Reduced plant diversity weakens slope erosion resistance, particularly in intensely altered landscapes, while greater

species richness strengthens it (Berendse et al., 2015; Song et al., 2019). Dale Hodges Park, built in 2019 in Calgary, uses riparian vegetation to stabilize soil that might otherwise be lost to erosion. Water is routed through a series of pools, streams, and vegetated riparian zones that filter sediments while allowing controlled, natural erosional processes to occur. The reconnection of hydrology restores the location's flood cycle by enabling unobstructed silt deposition and debris capture (Careri, n.d.).

3.3.2.4 Urban Heat Regulation

Impermeable urban surfaces, such as asphalt and rooftops, absorb and retain heat due to their low albedo, contributing to the urban heat island effect (Lehmann, 2021). As cities warm, greater reliance on air conditioning generates additional waste heat, increases energy use, and raises greenhouse gas emissions. This cycle degrades air quality, with fine particulate matter and ground-level ozone causing respiratory problems and other health risks (Lehmann, 2021). Increasing plant diversity in urban areas helps mitigate these effects by cooling microclimates (Paudel et al., 2025). Street trees are a common intervention for urban cooling (Dümpelmann, 2020), with shading capable of lowering building temperatures by up to 5 °C (Lehmann, 2021). Central Park in New York City, with its roughly 18,000 trees and 843 acres of lawns, paths, and woodlands, can reduce local temperatures by up to 9 °C (McMenamin, 2021). Similar effects have been documented in other dense urban contexts; in Delhi, vegetation and water features in large parks reduced surrounding land surface temperatures by up to 8 °C, thus improving thermal comfort (Jha et al., 2024).

3.3.2.5 Air Quality Management

Urban air pollution can be managed through biodiverse assets. Biodiverse plant life is vital in managing air pollution (Wang et al., 2018), with urban trees playing a significant role in reducing harmful pollutant concentrations (Lehmann, 2021). For example, researchers at Wageningen University found that a 150-year-old beech tree with approximately 800,000 leaves can absorb about 24 kg of CO2—equivalent to the emissions from a small car traveling 150 km—and produce roughly 11,000 litres of oxygen. This latter figure is enough to meet the daily breathing needs of 26 people (Lehmann, 2021). In addition to filtering greenhouse gases, biodiverse assets can filter harmful particulates that would otherwise be treated by expensive filters. For example, following the devastation of World War II in Berlin, trees were used to trap dust and other harmful particulates (Dümpelmann, 2020).

3.3.2.6 Asset Maintenance and Longevity

Investing in biodiverse assets means investing in long-term, low-maintenance solutions. Greater plant diversity is associated with increased ecological resilience and sustainability through complementary resource use and resistance to disturbance (Paudel et al., 2025). This resilience reduces water demand and reliance on chemical inputs for pest and disease control (Paudel et al., 2025). The High Line, whose first phase opened in 2009 in New York City, is a prime example of a semi-self-sustaining, biodiverse park. Its drip irrigation system and locally adapted, drought-tolerant plants minimize watering, while composting returns nutrients to the soil, eliminating the need for commercial fertilizers (The High Line, n.d.).

Mental Health

Physiological Health

Stormwater Management

Water Quality Management

Erosion Control

Urban Heat Regulation

Air Quality Management

Asset Maintenance and Longevity

Figure 5. Benefits of ecological parks.

3.4 A Biodiverse Park Blueprint

Before the benefits of ecological parks can be realized, it is necessary to understand the elements that define them, which in turn inform their creation and long-term stewardship. With over half of the world's population now living in urban areas and cities continuing to expand, interest in urban biodiversity—and its role in forming climate-adaptive and resilient ecosystems (IUCN, 2022)—has grown globally (IUCN, 2023). Supporting biodiversity is crucial for helping species (including humans) cope with accelerating climate change (Spotswood et al., 2019), yet simply adding large amounts of green space to cities can reduce urban density and efficiency (Lynch, 2019).

Effective urban biodiversity strategies integrate habitat protection and creation with strong ecological connectivity by designing networks of green spaces that link smaller habitat patches to one another and to core natural areas (Spotswood et al., 2019; Lynch, 2019). These linkages not only provide ecosystem services, but can also preserve cultural and spiritual values (Correa Ayram et al., 2016). Careful habitat design within urban ecological networks is pivotal (San Francisco Estuary Institute, n.d.). Ecosystem function within urban habitats is shaped by fine-scale relationships between the physical environment and their inhabitants (Spotswood et al., 2019). Factors such as terrain, habitat type, human activity, and climate influence wildlife movement and ecological flows (Beckmann et al., 2010), and should therefore be incorporated into ecological network modelling (Correa Ayram et al., 2016).

3.4.1 Biodiverse Landscapes

Ecological corridors facilitate species movement across multiple scales (Hilty et al., 2020). Landscape connectivity is essential for maintaining biodiversity by increasing species richness and enabling migration, dispersal, breeding, and genetic exchange (Lynch, 2019; Beckmann et al., 2010). Reduced connectivity can disrupt ecosystem service flows and undermine ecosystem regulation (Correa Ayram et al., 2016). Well-connected populations are also more resilient to environmental change, such as climate change or disease, than those in isolated patches (Beckmann et al., 2010). In urban contexts, connectivity between adjacent habitat types is particularly important, as many species move across landscapes at different times of day, seasons, or life stages (Spotswood et al., 2019).

3.4.1.1 Terrestrial Landscapes

Forests have been recognized as natural assets in multiple contexts, including in the Singapore Index for Biodiversity (Chan et al., 2021) and in the Municipal Natural Assets Initiative (2019). Importantly, biodiversity value is not limited to pristine forests; disturbed or repurposed sites, such as secondary forests, support diverse species (Parris et al., 2018). The BeltLine initiative, conceived by Trees Atlanta, is an example of transforming an urban corridor into a linear arboretum. The project resulted in the creation of a biodiverse, wildlife-friendly forest within a major urban centre (Beatley, 2020a).

Meadows are recognized as another biodiverse landscape, with the term "meadowscaping" being used to describe the formation of a cosmopolitan ecology (Lister & Careri, 2025). Perennial meadows have the potential to significantly enhance overall plant diversity in urban landscapes (Paudel et al., 2025), as well as create habitat for a multitude of pollinators.

Ravines are a distinctive landscape type,

capable of existing independently of or encompassing a creek or river. This intersectional state broadens ravines' potential to include a diverse assortment of habitats (Oviedo et al., 2022). Furthermore, ravines are naturally a continual landscape, which makes them optimal for wildlife movement (Newell et al., 2025).

3.4.1.2 Aquatic Landscapes

Water supports most wildlife and many plant species, and in urban environments, water bodies can sustain aquatic organisms such as invertebrates, amphibians, and fish that might otherwise be absent from the city (Spotswood et al., 2019). Rivers are recognized by the Municipal Natural Assets Initiative (2019) as natural assets for municipalities. Although urban rivers are often heavily engineered and polluted, it is possible to maintain or restore a wild character and rich biodiversity within an urbanized watershed (Brodowicz, 2019).

Lakes are another vital aquatic landscape and tend to be more resilient to anthropogenic change, particularly at larger sizes (Chan et al., 2021). Beyond their ecological value, lakes provide ecosystem services that support human well-being and local economies (Sterner, 2020). Surrounding terrestrial vegetation can further influence aquatic diversity, highlighting the interconnectedness of terrestrial and aquatic ecosystems (Mirza et al., 2025).

3.4.1.3 Bridging Landscapes

Wetlands blur the line between terrestrial and aquatic ecosystems and therefore represent a highly biodiverse landscape and municipal asset (Chan et al., 2021). Their ecological value is largely determined by their capacity to support species across gradients of water depth and spatial extent (Giosa et al., 2018). Even ornamental wetlands can serve important ecological functions, such as providing breeding habitat for amphibians within urban environments (Parris et al., 2018).

The Municipal Natural Assets Initiative (2019) recognizes creeks as valuable natural assets for municipalities. As first-order streams, they play an important role in maintaining habitat connectivity between terrestrial and aquatic landscapes (Parris et al., 2018). Protecting small streams is increasingly important for safeguarding biodiversity (Ferreira et al., 2023), as creeks provide diverse habitats for organisms such as benthic macroinvertebrates and semi-aquatic species (Oviedo et al., 2022; Ferreira et al., 2023).

Ponds are among the most biodiverse and ecologically important freshwater habitats globally, as they span public and private spaces, bridge the natural–engineered divide, and connect terrestrial and aquatic habitats (Parris et al., 2018; Hill et al., 2021). Ponds offer significant opportunities to mitigate anthropogenic pressures and reverse aquatic biodiversity decline (Hill et al., 2021).

3.4.2 Biodiverse Features

Large-scale landscape preservation is difficult to achieve in urban settings, but can be addressed by working piecemeal through the identification of biodiverse features. Biodiverse features are the tools that support larger environmental functions. Identifying natural landscape elements for the design of ecological networks can enhance comprehensive approaches to biodiversity conservation (Correa Ayram et al., 2016). The presence of these features will depend on on local conditions, site characteristics, and management approaches.

3.4.2.1 Terrestrial Features

A native tree canopy provides numerous ecological benefits (Chan et al., 2021), not only to humans, but to other species. In Atlanta, the creation of the BeltLine included planting a diverse palette of native trees along the corridor to support and attract multiple species (Beatley, 2020a). Planting tree alleys and low border vegetation around park edges with high canopy closure can create improved foraging and breeding spaces for diverse bird species (San Francisco Estuary Institute, n.d.). Lower canopy cover is associated with reduced bird diversity and increased predation rates (Basile et al., 2025).

Moving down through the canopy, native understory is a valuable biodiverse asset. Retaining understory vegetation supports nutrient cycling and provides habitat for a wide range of flora and fauna (Parris et al., 2018). Allowing natural growth around the base of trees is particularly important, as many insects pupate in ground-level habitats (Beatly, 2020b). Groundcover contributes further to understory complexity. Urban development and maintenance often removes leaf litter and woody debris that would otherwise decompose, enrich the soil, and provide microhabitats (Parris et al., 2018). Patches of bare ground or sand can serve as nesting sites for ground-nesting bees and other beneficial insects (San Francisco Estuary Institute, n.d.), while moss enhances soil moisture and nutrient availability, increasing fungal diversity and habitat complexity (Wei et al., 2025). Lichens also support soil formation, nutrient cycling, moisture regulation, and provide food and shelter for numerous species (Allen et al., 2019).

Grass stands out among groundcover types due to its prevalence in urban landscapes. Turfgrass is common in urban yards, but is less ecologically suitable than native grasses (Lister & Careri, 2025). Clearing native grasses reduces ground-layer invertebrate biodiversity and alters community composition, diminishing important food resources for pollinators and insectivorous vertebrates (Houston et al., 2023). Similarly, native wildflowers are often more ecologically beneficial than turfgrass despite perceptions of disorder or messiness (Lister & Careri, 2025). Nectar-bearing vegetation can attract birds within built environments (Chan et al., 2021). Establishing large and diverse wildflower habitats within fragmented landscapes can therefore enhance habitat connectivity while supporting greater pollinator abundance and diversity (Blaauw & Isaacs, 2014).

3.4.2.2 Aquatic Features

The type of water present in an ecosystem—fast flowing, slow flowing, or still—shapes the species it can support. Increasing stream continuity can slow water velocity, create resting areas, and deepen channels, thereby improving habitat conditions (Beckmann et al., 2010). Tributary confluences also function as biological hotspots within aquatic networks. At these junctions, shifts in channel and valley morphology create heterogeneous flow patterns and water levels that can increase species richness (Benda et al., 2004). Hydrological connectivity between streams, riparian zones, and adjacent floodplains further supports diverse aquatic communities (Spotswood et al., 2019).

Native riparian vegetation is associated with with improved water quality, greater habitat complexity, and healthier macroinvertebrate communities (Gu et al., 2025). Even within developed areas, riparian buffers can mitigate

the ecological impacts of urbanization on aquatic life (Gu et al., 2025). Native aquatic vegetation performs similar functions. Older, well-managed wetlands with dense submerged and emergent vegetation provide refugia, habitat complexity, and increased food availability (Schad et al., 2020).

3.4.2.3 Subterranean Features

The feature underpinning the vast majority of these landscapes, both terrestrial and aquatic, is bioactive soil. When assessing the health of an ecosystem, it is important to look at the slope, type, and permeability of the soil (Senes et al., 2021). Impermeable surfaces, such as roads, roofs, sidewalks, and channels disrupt the natural water cycle, which prevents its interaction with flora and fauna. Urban development also breaks soil nutrient cycles by removing topsoil and clearing away leaves and grass clippings that would normally feed the soil and provide habitat (Parris et al., 2018).

3.4.3 Facilitating Biodiversity

The literature identifies not only which landscapes and features support biodiversity, but also how natural assets can be incorporated into parks to enhance biodiversity, connectivity, and climate resilience. Combining connectivity strategies is important for maximizing biodiversity outcomes. Corridor strategies are generally the most effective approach, with even small corridors supporting species with limited mobility (Spotswood et al., 2019). When corridors are not feasible, stepping-stone strategies can provide alternatives. Artificial features such as rain gardens, bioswales, riparian corridors, and wildlife crossings can also be integrated into parks to build and connect naturally occurring biodiverse assets (Spotswood et al., 2019).

Biodiversity can also be strengthened by pairing habitat features with appropriate planting strategies. Designing around keystone species can support native wildlife and reduce the dominance of invasive species (San Francisco Estuary Institute, n.d.). Where native plants are incompatible with site constraints or desired ecosystem services, near-native or carefully selected non-native species can still provide resources for local fauna. Monitoring soil conditions—such as composition, nutrient structure, acidity, compaction, and porosity—is equally important, as vegetation should be matched to soil characteristics to promote long-term growth and resilience (San Francisco Estuary Institute, n.d.).

Water features should be designed to maximize habitat value through size, diversity, and natural structure. Daylighting buried streams and urban waterways can restore habitat, improve accessibility, and strengthen ecological connectivity, as streams support distinctive wildlife communities and serve as movement corridors (San Francisco Estuary Institute, n.d.).

Habitat protection must also be balanced with visitor experience. Natural barriers can discourage human intrusion while allowing wildlife movement. Where barriers are necessary, wildlife-friendly designs can facilitate animal movement while limiting human interference (San Francisco Estuary Institute, n.d.). Lighting should also be used strategically by limiting illumination in sensitive areas to discourage nighttime use while minimizing impacts on wildlife.

Forests
Meadows
Ravines

Rivers
Lakes

Wetlands
Creeks
Ponds

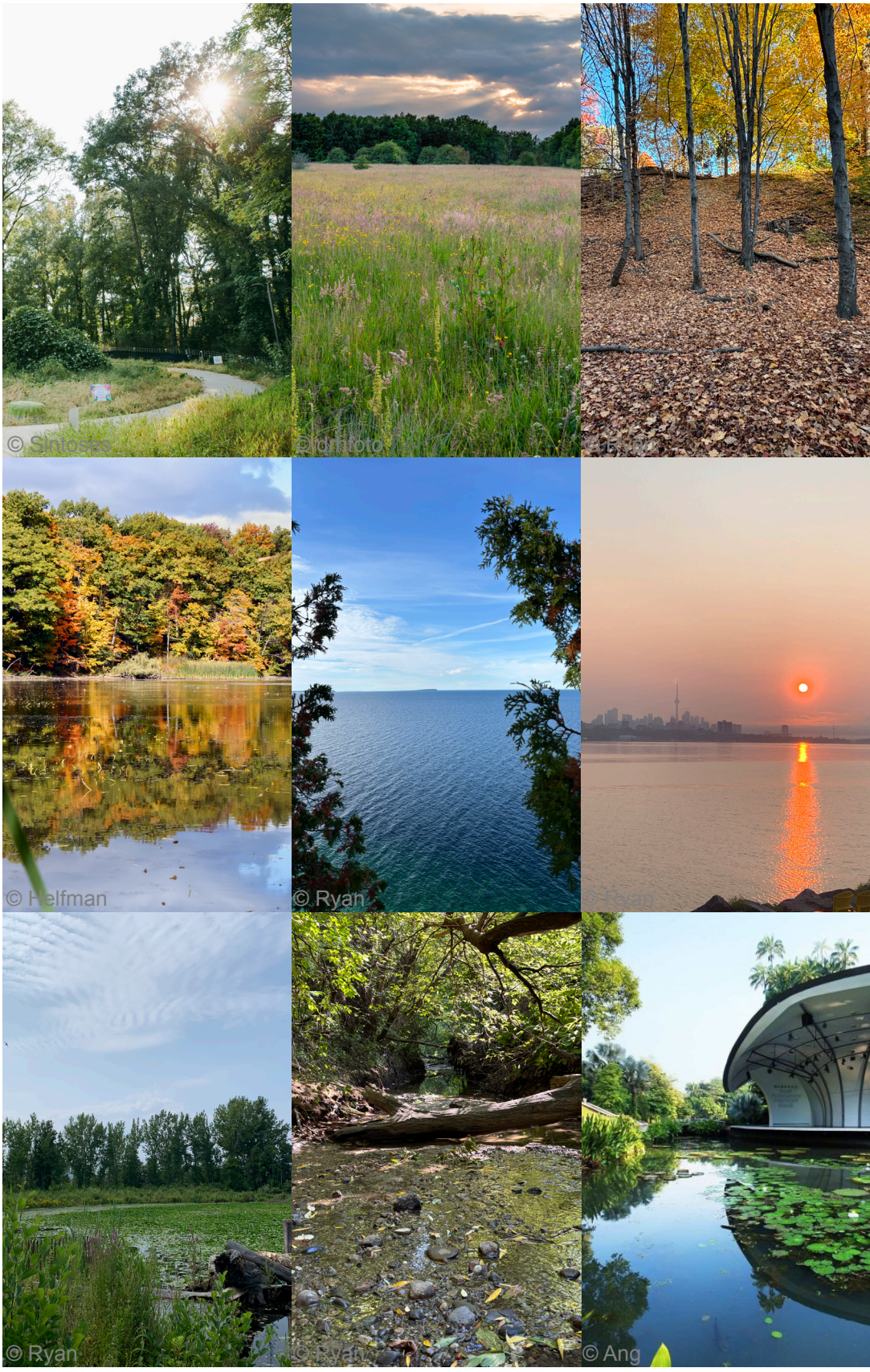


Figure 6. Biodiverse landscapes.

Native tree canopy
Native understory
Ground litter

Native riparian plants
Native aquatic plants
Riffles and runs

Pooling water
Soil type and structure
Soil bioactivity

Figure 7. Biodiverse landscape features.

3.5 Practical Progression

The literature clearly shows that biodiversity plays a pivotal role in the future of urban parks and that there are ways to incorporate them into the landscape hypothetically. However, this desire for new, ecological parks must be tempered with real-word practicality.

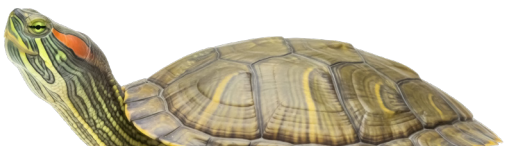
3.5.1 Capitalizing on the Nature Premium

Ecological urban spaces create opportunities to capitalize the social, environmental, and health benefits of nature (Anguelovski et al., 2019). Research shows an approximate 20% increase in property values for properties directly abutting or fronting larger, natural community parks (Crompton, 2001). In particular, the High Line in New York City demonstrates how proximity to major public amenities can accelerate property value appreciation. Properties within 150 metres of the High Line increased in value by 60% between 2007 and 2018, contributing US$3.4 billion (Barbanel, 2016; Dark Matter Labs, 2019). These examples demonstrate the existence of a Nature Premium, which, if more intentionally integrated into economic and political decision-making, can be leveraged to support the delivery of ecological parks while aligning biodiversity, climate, and development agendas (Mutlu et al., 2023).

3.5.2 The Role of Ombrello Solutions

To effectively leverage the nature premium, a governing body is needed to facilitate the creation, implementation, and maintenance of ecological parks. While the development or restoration of parks can provide valuable social and environmental benefits, they can also create unintended consequences. Such spaces have the potential to attract the “creative class” while simultaneously becoming inaccessible or exclusionary for low-income and racialized residents (Anguelovski et al., 2019). Even with well-intentioned urban greening, improvements aimed at achieving environmental justice can drive up housing costs and reshape local commercial infrastructure (Wolch et al., 2014). A dedicated governing body could help mitigate these impacts and more.

Ombrello Solutions’ PARKS+ proposal provides a framework for advancing the Nature Premium and delivering ecological parks while ensuring their equitable governance, management, and support for biodiversity. The PARKS+ funding model begins with institutional investors purchasing Ombrello’s CIB. These investments are secured through an SCC registered on property titles, capturing a portion of property value uplift in perpetuity: 10% for existing properties per transaction, 20% for new developments at completion plus 10% thereafter, and 50% of future land value uplift. Returns from the covenant are used to repay the bond for investors and fund the CEF. The CEF is analogous to a community land trust, functioning to ensure long-term collective stewardship of ecological assets while maintaining public-oriented governance over land and biodiversity outcomes. Through this cycle, ecological benefits enhance property values, sustaining the fund and ensuring long-term fiscal and ecological impact.



4.0 GOVERNANCE ANALYSIS

The following section continues the literature review with a focus on governance by analyzing organizational models across diverse sectors and global contexts. These examples provide foundational insight into how governance structures operate across different settings and inform the development of the PARKS+ model.

4.1 Project Finance for Permanence

Project Finance for Permanence (PFP) is a large-scale sustainable finance mechanism designed to secure long-term funding for conservation and community development through a single, negotiated closing agreement (Arroyo, 2024). Unlike fragmented conservation finance approaches, a PFP aligns governments, Indigenous Peoples, local communities, private donors, and partner organizations under a shared framework that ties funding to measurable ecological and social outcomes (ecological and societal KPIs). A defining feature of the model is the closing output,where all financial, governance, and policy commitments are secured simultaneously to ensure permanence.

The model is structured around nine core components. These include a co-developed Conservation and Community Development Plan; a Financial Model covering full projected costs for at least a 10-year implementation period; financial reporting and performance

monitoring systems; and formalized government commitments to embed conservation priorities within policy and budget frameworks. A central institutional mechanism is the establishment of an independent Conservation Trust Fund (CTF), which manages and disburses funds according to agreed governance structures and timebound disbursement conditions. Long-term domestic financing mechanisms and environmental and social safeguards, including Free, Prior, and Informed Consent (FPIC) for indigenous and local communities, are also required to ensure accountability and durability (Arroyo, 2024).

Globally, the PFP model has supported conservation commitments covering hundreds of millions of hectares, positioning it as a replicable framework that integrates governance reform, financial sustainability, and community stewardship to achieve lasting conservation outcomes (Arroyo, 2024). The model is operationalized differently across contexts, but consistently combines pooled capital, structured disbursement, and governance reform.

4.1.1 Coast Funds, British Columbia

In Canada, Coast Funds represents an applied PFP structure supporting Indigenous-led conservation and economic development along the Great Bear Rainforest and Haida Gwaii. It operates through two entities; the Coast Economic Development Society, which manages a $60 million economic development fund invested in First Nation business initiatives, and the Coast Conservation Endowment Fund Foundation, which administers a $2 million conservation planning fund and a permanent endowment of approximately $56 million (Coast Funds, n.d.). Income generated from the endowment provides ongoing funding for conservation science, planning, and stewardship capacity. This dual-fund structure illustrates how a PFP blends economic uplift and conservation financing under a transparent, audited framework.

4.1.2 Brazilian Biodiversity Fund (FUNBIO), Brazil

Similarly, Brazil's Brazilian Biodiversity Fund (FUNBIO) functions as a non-profit biodiversity finance mechanism supporting implementation of the Convention on Biological Diversity (FUNBIO, 2017). Originally capitalized with $20 million from the Global Environment Facility (GEF), which pools taxpayer funds from donor countries, FUNBIO operates as an environmental trust fund governed by a public–private board and fiduciary fund manager. It receives and disburses charitable funds for conservation projects, with annual audits reinforcing transparency. The structure demonstrates how pooled international capital can be institutionally managed to meet national biodiversity targets.

4.1.3 Bhutan For Life (BFL), Bhutan

In Bhutan, Bhutan for Life (BFL) applies the PFP model at a national scale, covering the country's entire protected area network (Bhutan for Life, n.d.). Donors pooled approximately $43 million in capital, which was ring-fenced for conservation purposes and released based on performance milestones tied to policy commitments and management effectiveness. The Government of Bhutan retains full sovereignty over land and conservation decisions, embedding conservation costs into national budgets over a 14-year transition period to reduce long-term reliance on international donors. This demonstrates how

PFPs link milestone-based disbursement to domestic fiscal integration.

4.1.4 Peru Naturalized Legacy, Peru

Peru Naturalized Legacy follows a similar PFP structure but operates within a more fragmented governance context, requiring coordination across multiple agencies, regions, and Indigenous authorities. Strong government oversight is emphasized due to pressures from illegal mining, logging, and agricultural encroachment (WWF, 2018). This highlights how PFPs must adapt governance structures to varying institutional complexity and enforcement challenges.

Across cases, PFPs function by pooling capital upfront, placing funds in independent trust mechanisms, tying disbursement to performance and policy milestones, and embedding long-term conservation financing within domestic governance systems. In practice, they institutionalize conservation permanence by aligning financial certainty, government commitment, and community stewardship under a single negotiated framework.

4.2 Registered Charity and Non-Profit Conservation Organizations

4.2.1 The Royal Parks, United Kingdom

The Royal Parks (UK) operates under a hybrid public–charitable governance model. Established as a registered charity, The Royal Parks manages London's eight Royal Parks under a formal management agreement with the UK Department for Culture, Media and Sport, meaning it operates at arm's length from direct government control while remaining publicly accountable (The Royal Parks, 2025). Its funding model is diversified, combining government grants with commercial user fees, concessions, events revenue, and philanthropic donations. Importantly, funding streams are ring-fenced for designated purposes such as conservation, maintenance, and biodiversity programs, helping to protect ecological priorities within its operational framework (The Royal Parks, 2025).

This model provides relative financial stability compared to purely philanthropic land trusts; however, reliance on commercial activities and visitor-generated revenue introduces market pressures that can create tension between conservation integrity and income generation. As a result, while The Royal Parks demonstrates a resilient and transparent hybrid stewardship model, its partial dependence on user fees may risk incremental commercialization that could dilute ecological priorities over time.

4.2.2 Foundation Terre Solidaire, Québec

Fondation Terre Solidaire operates as a private philanthropic foundation with a mission-driven environmental protection mandate. Governed by a board of trustees, the foundation deploys philanthropic capital to issue grants, support land acquisition initiatives, and strengthen long-term environmental stewardship efforts (Fondation Terre Solidaire,n.d.). Unlike statutory public bodies or hybrid government-charity operators, its financial resources are derived from private philanthropy and charitable contributions rather than direct state allocations or commercial revenue streams. The foundation acts both as a grant-maker and as a capital partner, strategically financing projects aligned with environmental protection and land conservation objectives. This governance structure provides autonomy from government political cycles and commercial pressures; however, it also means that funding capacity is dependent on philanthropic inflows and donor priorities. As a result, while Fondation Terre Solidaire represents a flexible and mission-aligned stewardship model, its long-term scalability and financial predictability are inherently tied to the stability of private philanthropic capital rather than legislated or self-generating revenue mechanisms.

4.2.3 The Bruce Trail, Ontario

Bruce Trail Conservancy operates under a relational, commons-oriented governance model grounded in what has been described as "kind permission" access rather than statutory right-of-way. The Bruce Trail was developed in a context of strong private landownership traditions in Canada, where public right of access legislation was politically unfeasible (Shimada, 2010). Instead of seeking legal access rights, the organization built the 885 km trail by negotiating individual agreements with private landowners, emphasizing courtesy, trust, and the avoidance of permanent right-

of-way claims. To protect landowner rights, the trail is intentionally closed one day per year to prevent legal claims of prescriptive easement, and signage explicitly frames public access as a privilege rather than a right (Shimada, 2010). Governance is structured through a volunteer-based federation of nine regional clubs operating under the Bruce Trail Conservancy, with strong member engagement and stewardship codes regulating trail behaviour. Financially, the organization relies heavily on donations (approximately 60% of revenue), membership dues, and government grants, supplemented by a dedicated Escarpment Preservation Fund used for land acquisition (Shimada, 2010). Over time, this model has blended negotiated access with strategic land purchases to secure permanent conservation corridors. While highly adaptive and socially embedded, the model remains structurally dependent on landowner goodwill and ongoing civic participation rather than legislated access or endowed financial permanence.

4.2.4 The John Muir Trust, Scotland

The John Muir Trust is a registered charitable land trust established to protect, restore, and provide public access to wild landscapes, holding land in perpetuity for conservation and public benefit (John Muir Trust, n.d.). Governed through a democratic membership model, the Trust is overseen by trustees elected by its thousands of members, with those trustees acting as the decision-making body for strategic, ethical, and operational governance (John Muir Trust, n.d.). This membership-based governance structure enhances civic legitimacy and stakeholder accountability by giving supporters direct influence over governance decisions, distinguishing it from more centralized or state-appointed trustee models. Financially, the Trust is sustained by a diversified mix of membership subscriptions, philanthropic donations, grant funding, and limited user fees, reflecting its blended civil-society revenue base (John Muir Trust, n.d.). Like many land trusts, it experiences chronic funding gaps, which can constrain long-term land management and restoration activities; this dependency on voluntary revenue sources also exposes it to fluctuations in donor engagement and grant availability. Nonetheless, its governance model rooted in perpetual land stewardship, community participation, and democratic oversight positions it as a durable conservation institution that balances ecological protection with public benefit, even without statutory powers or large endowment capital.

4.3 Federal Grant Making Bodies

4.3.1 National Heritage Memorial Fund, United Kingdom

The National Heritage Memorial Fund operates as a statutory federal grant-making body established by Act of Parliament to safeguard the United Kingdom's heritage assets. Unlike time-bound conservation finance mechanisms such as Project Finance for Permanence (PFP), the Fund is not structured around a defined closing agreement or performance-based milestone framework; rather, it functions as a permanent public funding institution (National Heritage Memorial Fund, n.d.). Governance is overseen by trustees appointed by the UK government, reinforcing public accountability while maintaining operational independence at arm's length from direct political control.

Financially, the Fund is supported through a combination of direct government allocations and revenue derived from the National Lottery, where a legislated percentage of lottery ticket sales is directed toward heritage protection (National Heritage Memorial Fund, n.d.). This model provides a relatively stable and predictable revenue stream compared to philanthropic or membership-based funding structures. However, as a redistribution mechanism, the Fund primarily awards grants rather than owning or stewarding assets directly, and funding availability remains contingent on lottery performance and government policy decisions. While effective for large-scale heritage funding, this governance structure does not embed project-specific revenue generation or permanent stewardship financing, distinguishing it from endowment-based or value-capture conservation models.

3.3.2 German Federal Environmental Foundation (Deutsche Bundesstiftung Umwelt [DBU]), Germany

The German Federal Environmental Foundation (DBU) operates under a federally endowed foundation governance model established by the German government to support environmental protection and sustainable development. Unlike time-bound project finance mechanisms, DBU is capitalized through a permanent public endowment, with investment income deployed to fund biodiversity conservation, environmental innovation, and sustainability initiatives aligned with national environmental priorities (German Federal Environmental Foundation, n.d.).

Although founded by the federal government, DBU functions as a foundation with its own governance structure, distributing grants to projects rather than directly owning or managing conservation assets. This model provides financial stability through endowment income rather than annual appropriations or lottery revenues, allowing long-term strategic funding commitments. However, as a grant-making body, DBU's impact is mediated through funded organizations rather than direct stewardship authority, and its funding priorities remain closely aligned with federal environmental objectives. The DBU model demonstrates how a permanent public endowment can institutionalize environmental funding, but it does not create asset-level permanence or revenue self-generation mechanisms comparable to conservation trust funds or value-capture endowment models.

4.4 Housing Organizations

4.4.1 Champlain Housing Trust, Vermont (USA)

The Champlain Housing Trust (CHT) in Vermont is a well-established community land trust (CLT) created in response to rising housing costs and increasing land speculation. Its model separates land and building ownership, with land held permanently by the trust while homes are rented or owned by residents. This allows households to build equity in their homes without being exposed to land market volatility, ensuring long-term affordability. Affordability is further supported through income-based rent structures, where households earning approximately 60% of median income pay less than 30% of their income on housing, often supplemented by federal programs such as housing vouchers and the Low-Income Housing Tax Credit (Yoo, 2024).

A key mechanism within the model is its resale formula, which preserves affordability across generations. Homeowners retain their initial down payment, mortgage principal, value of renovations, and approximately 25% of property appreciation, while the remaining 75% is retained by the trust to maintain affordability for future buyers (Yoo, 2024.). Financially, the trust operates through a blended model, with approximately 50% of revenue derived from rents and stewardship fees, 10% from property management, and roughly one-third from grants. Additional supports such as subsidized loans, financial education, reduced property taxes, and a monthly stewardship fee reinforce long-term stability. Governance is structured through a tripartite model, including residents, community members, and public representatives, ensuring balanced and accountable decision-making (Yoo, 2024).

In relation to the CEF, the Champlain model demonstrates how land can be held permanently for public benefit while capturing value uplift for reinvestment. Similar to how 75% of housing appreciation is retained within the trust, mechanisms such as SCCs could capture nature-based value uplift and reinvest it into long-term ecological stewardship, ensuring benefits are not privatized but retained for collective use.

4.4.2 Dudley Street Neighborhood Initiative, Boston (USA)

The Dudley Street Neighborhood Initiative (DSNI) is a community-led land trust model developed in response to severe neighbourhood disinvestment, including vacant land, dumping, and arson. Through federal and philanthropic support, DSNI secured authority to acquire vacant land and place it into a community land trust, enabling development without displacement. The model embeds long-term affordability protections and prevents speculative turnover, ensuring that revitalization benefits existing residents (Dudley Street Neighborhood Initiative, n.d.).
DSNI's governance structure is highly participatory, with a 35-member board of directors elected by the community every two years. Notably, four seats are reserved for youth aged 15–17, who participate directly in decision-making alongside adult members. This emphasis on democratic governance and youth inclusion reinforces long-term accountability and builds future leadership capacity (DSNI, n.d.). Financially, the organization leverages partnerships and community-based initiatives rather than relying solely on traditional revenue streams.

The DSNI model offers clear applications to the CEF. Like DSNI's permanent community ownership of land, the CEF holds parks and ecological lands in trust to ensure long-term stewardship. Additionally, DSNI's governance model, particularly its inclusion of youth voices could inform CEF governance structures by embedding representation for future generations and ensuring that long-term ecological and community interests are reflected in decision-making.

4.4.3 Parkdale Neighbourhood Land Trust, Toronto (Canada)

The Parkdale Neighbourhood Land Trust (PNLT) is a "community-controlled non-profit… that acquires, owns, and stewards land for community benefit" (Wandio & Barndt, 2024, p. 6). Its governance model uses a tripartite structure with representation from core members (people who live or work on Land Trust properties), community members (people from the neighbourhood it serves), and organizational members (local, Parkdale based non-profits), all represented through a democratically elected board (Wandio & Barndt, 2024, p. 43). Its charitable arm, The Neighbourhood Land Trust (NLT), owns the assets and focuses on fiduciary oversight, while operating partners or charitable partners manage day-to-day operations, property management, and tenant support through lease agreements (Wandio & Barndt, 2024). This example shows how a trust-based model can combine long-term stewardship, community representation, and accountable governance for assets held in the public interest.

5.0 PARKS+ GOVERNANCE

Governance for the PARKS+ model culminates into three recommendations: governance principles, a governance board, and perpetuity tools. These recommendations establish a governance ethos grounded in good governance principles and define the structures needed to support representative, financially responsible, and ecologically accountable decision-making.

5.1 Governance Principles

The seven PARKS+ governance principles are:

(1) Long-term vision in decision making

(2) Commitment to biodiverse environmental stewardship

(3) Community-centred impact

(4) Perpetual stewardship and protection

(5) Responsible financial stewardship and bond repayment

(6) Value recapture and community reinvestment

(7) Transparent and representative governance

5.1.1 Long-Term Vision in Decision Making

Board decision-making in the PARKS+ model should be grounded in a long-term vision rather than short-term political, market, or project delivery cycles. Research on biodiversity governance shows that many existing governance systems are poorly matched to ecological realities because they privilege short-term growth, fragmented decision-making, and incremental reforms over long-term stewardship and systemic responsibility (Visseren-Hamakers & Kok, 2022). Long-term orientation is also central to endowment governance, where boards are expected to preserve purchasing power, sustain mission alignment, and avoid reactive decision-making driven by short-term volatility (Beacon Endowment Solutions, 2023; Cambridge Associates, 2016). For PARKS+, this means board members should evaluate decisions according to their contribution to intergenerational ecological, social, and financial outcomes rather than immediate pressures alone.

5.1.2 Commitment to Biodiverse Environmental Stewardship

Board decisions should be committed to biodiverse stewardship, treating ecological protection as a core obligation rather than an optional co-benefit. Contemporary biodiversity governance literature argues that biodiversity loss cannot be addressed through fragmented or weakly enforced governance systems, instead requiring institutional arrangements that embed ecological responsibility into decision-making (Visseren-Hamakers & Kok, 2022). Governance research on nature-based solutions similarly emphasizes that effective outcomes depend on clear responsibilities, technical expertise, and structures that support stewardship beyond project installation (Zingraff-Hamed et al., 2021).

Organizational precedents reinforce this approach. Ducks Unlimited Canada and the Intergovernmental Panel on Climate Change both embed conservation and scientific expertise within their governance structures (Ducks Unlimited Canada, 2018; Intergovernmental Panel on Climate Change, n.d.a). In Ontario, the Toronto and Region Conservation Authority (TRCA) integrates municipal representation with advisory committees on watershed expertise, while the Bruce Trail Conservancy prioritizes stewardship and land management competencies in board recruitment (Toronto and Region Conservation Authority, n.d.; Bruce Trail Conservancy, n.d.). Collectively, these examples support a PARKS+ governance principle in which major decisions are evaluated against biodiversity goals, ecological thresholds, and stewardship obligations, with technical expertise embedded in either the board or formal advisory structures.

5.1.3 Community-Centred Impact

Another guiding principle is that governance must be community-centred and attentive to social impact. Collaborative governance literature shows that durable institutions require more than formal structure; they also depend on trust, clear role definition, and meaningful participation by affected actors (Bianchi et al., 2021). Community-oriented park governance can improve legitimacy, strengthen responsiveness to local needs, and ensure that public space investments produce social value rather than only physical upgrades. The experience of 11th Street Bridge Park in Washington, D.C. is instructive because local residents and non-profit partners helped shape an equitable development plan around housing, workforce development, arts, culture, and small business support, demonstrating that park governance can be linked to broader neighbourhood well-being and anti-displacement outcomes (Building Bridges Across the River, n.d.; Frumkin et al., 2024). Assiniboine Park Conservancy likewise frames board leadership in terms of responsibility to the communities it serves, and Cultus Lake Park's elected board model illustrates how direct community accountability can be embedded in park governance (Assiniboine Park Conservancy, n.d.; Cultus Lake Park, n.d.). For PARKS+, this principle means that board members should consider not only environmental performance but also how decisions affect access, inclusion, displacement risk, community trust, and local social benefit.

5.1.4 Perpetual Stewardship and Protection

Board governance should be guided by the principle of perpetual stewardship and protection. Ontario land trust research warns that ownership alone does not guarantee conservation success; long-term outcomes depend on governance capacity, monitoring systems, institutional memory, and clearly defined stewardship functions (Roach, 2007). Weak monitoring, informal authority, and volunteer turnover can produce failures years after land acquisition, which is especially relevant to any model seeking to protect ecological assets over decades (Roach, 2007). This concern is echoed in broader environmental governance scholarship, which finds that governance models often prioritize project delivery over stewardship, even though ecological assets require active long-term care, enforcement, and institutional presence (Zingraff-Hamed et al., 2021; Visseren-Hamakers & Kok, 2022). Examples such as the Bruce Trail Conservancy, John Muir Trust, and TRCA show that organizations with conservation mandates place emphasis on stewardship, land management, and recurring governance oversight rather than treating protection as a one-time transaction (Bruce Trail Conservancy, n.d.; John Muir Trust, 2024; TRCA, n.d.). In the PARKS+ context, governance should treat long-term maintenance, covenant compliance, ecological monitoring, and capital preservation as core duties tied to the perpetual protection of the asset.

5.1.5 Responsible Financial Stewardship and Bond Repayment

Governance should be grounded in the principle of responsible financial stewardship and bond repayment. Based on the PARKS+ model developed so far, early-stage cash flows should first move through the special purpose vehicle to maintain investor confidence and ensure repayment discipline before surplus value is redirected elsewhere. The proposed bond structure includes a fixed return and a bullet repayment at the end of the term, which means governance must avoid premature diversion of funds that would weaken credit confidence or compromise capital obligations. This principle aligns with endowment and institutional investment governance more broadly, where boards are expected to manage risk through structured reporting, disciplined oversight, and adherence to clear financial rules rather than ad hoc decision-making (Cambridge Associates, 2016; University of Toronto Asset Management Corporation, 2025). In PARKS+, this means board members should recognize bond repayment as a non-negotiable fiduciary priority during the bond term, with decisions about distributions, reinvestment, or social programming structured so they do not undermine repayment security.

5.1.6 Value Recapture and Community Reinvestment

Governance should be guided by the principle of value recapture and community uplift through reinvestment. The model's rationale is not only to finance ecological assets, but to ensure that value generated through park enhancement, surrounding uplift, and long-term place improvement can be recaptured and reinvested into stewardship and community benefit rather than extracted entirely for private gain. This principle responds to concerns in environmental governance that market-based models can redirect accountability upward to investors unless structures are put in place to preserve public purpose (Logan & Wekerle, 2008). Community foundation and endowment precedents are useful here because they show how permanent capital can be invested to generate long-term returns while preserving principal and supporting recurring community-serving distributions (Community Foundations of Canada, 2016; Toronto Foundation, 2024). For PARKS+, value recapture should therefore be governed by rules that direct post-obligation surplus toward ecological maintenance, community benefits, local programming, and neighbourhood reinvestment, helping ensure that park-generated value circulates back into the communities and ecosystems that produced it.


© Drazen

5.1.7 Transparent and Representative Governance

Transparent and representative governance is another foundational principle. Good governance literature consistently shows that legitimacy depends on clear roles, transparent procedures, verification systems, and mechanisms that address power asymmetries (Bianchi et al., 2021; Bruni-Bossio & Kaczur, 2022). Trust in nonprofit and hybrid governance systems is therefore grounded not in goodwill alone, but in disclosure, auditing, verification, and visible accountability mechanisms that clarify how decisions are made and performance is assessed (Park & Suh, 2025).

Institutional precedents from conservation and public governance reinforce this. Ducks Unlimited Canada uses a nomination process that evaluates candidates based on competencies and contributions, while the IPPC, Rouge National Urban Park Advisory Committee, and Coast Funds use structured appointment systems that balance representation, expertise, and mandate-specific accountability (Ducks Unlimited Canada, n.d.; Intergovernmental Panel on Climate Change, n.d.b; Parks Canada, 2022; Coast Funds, 2025). Furthermore, the literature shows that broad, multi-stakeholder representation can still be managed openly and aligned with long-term, communal interests (Parks Canada, 2022; Parks Canada, n.d.). For PARKS+, transparent and representative governance should include published roles, conflict-of-interest rules, clear mandates, periodic reporting, and a board that reflects municipal, Indigenous, community, technical, and financial perspectives without devolving into stakeholder conflict.

Related to representation, PARKS+ governance should explicitly recognize Indigenous, youth, and academic participation as part of responsible and future-oriented stewardship. Indigenous governance precedents such as Rouge National Urban Park, Thaıdene Nëné, and Coast Funds show that environmental governance gains legitimacy and depth when Indigenous nations are represented through formal structures rather than informal consultation alone (Parks Canada, 2022; Parks Canada, n.d.; Coast Funds, 2025).

Youth governance models such as the Dudley Street Neighborhood Initiative and the Future Generations framework in Wales demonstrate that intergenerational responsibility can be built into governance through reserved seats, advisory structures, or dedicated roles that force decision-makers to consider long-term societal effects (Dudley Street Neighborhood Initiative, n.d.; Future Generations Commissioner for Wales, 2015).

University collaboration models, including the kinds of relationships seen in conservation research partnerships, suggest that non-voting academic participation can strengthen governance by supplying evidence, environmental monitoring, and evaluation support without destabilizing board accountability. For PARKS+, these lessons support a representative governance model in which technical and community knowledge are institutionally embedded, future generations are recognized as legitimate governance concerns, and representation extends beyond conventional municipal and investor stakeholders.

Finally, these principles suggest that PARKS+ should operate through a hybrid board model rather than a purely community-elected body, purely technocratic board, or purely investor-led structure. Case examples such as BIAs, Waterfront Toronto, Prosper Portland, Toronto Foundation, and conservation organizations show that long-term public-interest governance often works through mixed systems in which asset stewardship is protected by an independent board, public accountability is maintained through municipal involvement, expertise is introduced through technical members or committees, and community legitimacy is strengthened through representative participation and advisory mechanisms (City of Toronto, n.d.; Waterfront Toronto, n.d -b.; Prosper Portland, 2025; Toronto Foundation, 2024). In PARKS+, the implication is that board members should be guided by a shared fiduciary duty to the ecological asset and the long-term public purpose of the model, even where they enter the board through different constituencies or forms of expertise.

5.2 Governance Board

Governance boards for public, private, non-profit, and community-based organizations and institutions often share common features. The commonalities across these governance boards informed the creation of the PARKS+ governance board.

The PARKS+ governance board framework is composed of trustees who vocationally steward these parks in perpetuity. Two trustees are definitive: the Financial Interests Representative and the Covenant Holder Representative. “Definitive” means these trustees are inseparable from the governance model, appearing in every future example of a park governance board under PARKS+. The board also includes a baseline of five at-large trustees: the Natural Asset Manager, Resident and Community Representative, Indigenous Representative, Municipal Representative, and BIA Representative. “At-large” indicates that while the framework specifies the type of vocation needed for each trustee, there is flexibility regarding the trustee’s specific profession and experience.

The goal of this governance board is to align ecological, community, and financial objectives in order to maximize biodiversity, connectivity, climate resiliency, community representation and integration, fiscal responsibility, and bond repayment. The PARKS+ governance board framework is intentionally flexible. It is designed to evolve alongside the park and its community by accommodating future growth. Seats can be added over time to reflect changing priorities and ensure that governance remains relevant and effective.

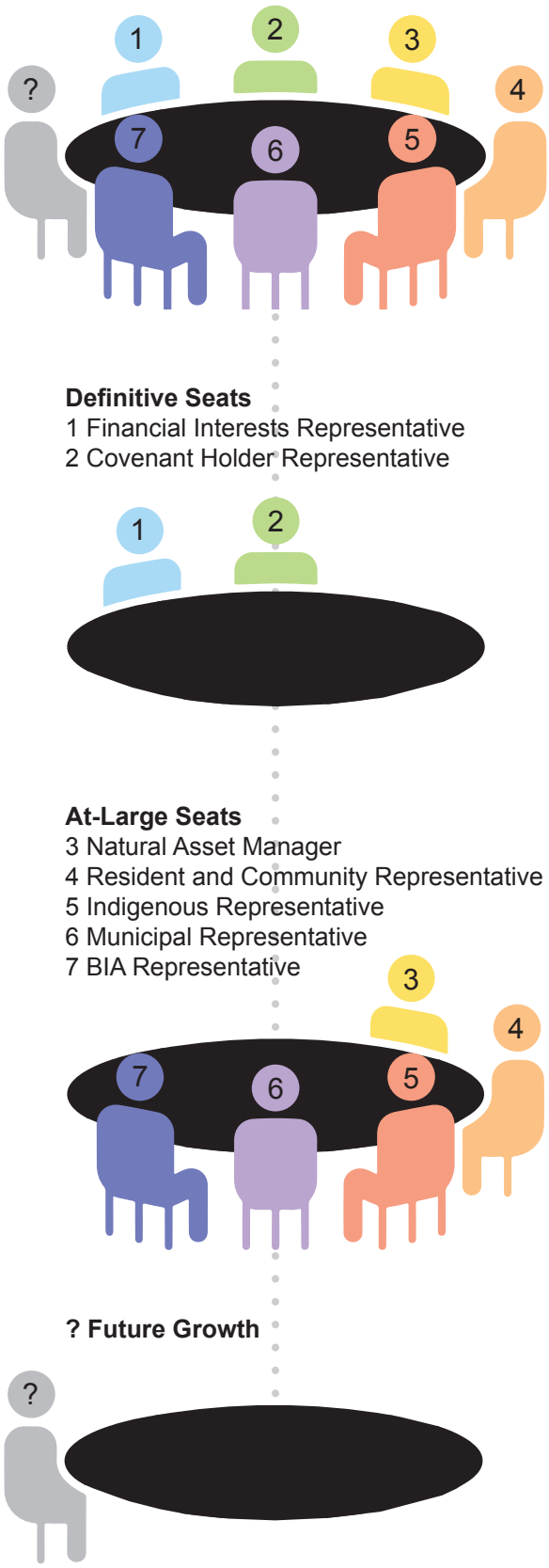


Figure 8. The PARKS+ governance board breakdown.

5.2.1 Financial Interests Representative

5.2.1.1 Expertise

The board should include a representative whose expertise is grounded in financial management, and capital investment, with experience in sustainable financing models and not-for-profit governance. They would additionally be familiar with the concept and function of the Nature Premium.

5.2.1.2 Authority

This expert would leverage their experience to align the subject park with Ombrello Solutions' organizational mission in support of bond repayment and perpetual stewardship.

5.2.1.3 Selection Process

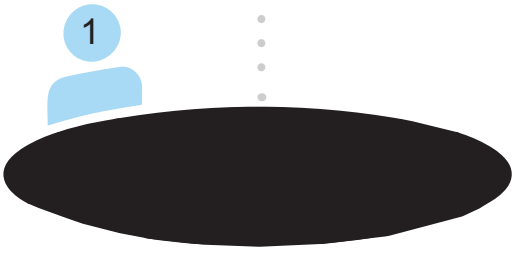
The person occupying this seat would be appointed on behalf of Ombrello Solutions, recognizing that direct staff involvement will not be feasible as the model scales.

5.2.1.4 Sitting Term

Term structure—including length, limits, and number of terms—should be determined at the discretion of Ombrello Solutions; however, periodic turnover of this seat is recommended.

5.2.1.5 Voting Prowess

The Financial Interests Representative should have voting rights, reflecting their critical role in financial oversight and their expertise in understanding the subject park's nature-based value. This seat should have opportunities to consult with additional non-voting advisors.



5.2.2 Covenant Holder Representative

5.2.2.1 Expertise

The board should include a representative whose expertise is derived from being a holder of an SCC.

5.2.2.2 Authority

This seat holder would act as the authority representing SCC holders, They would align the subject park with their collective investment goals and advise on returns generated through park performance and the nature premium.

5.2.2.3 Selection Process

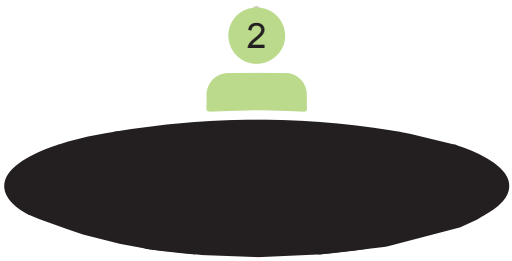
The selection process should be conducted through an internal election among SCC holders, with self-nomination prohibited to ensure fairness and integrity.

5.2.2.4 Sitting Term

The term length and number of terms for this seat should be determined to ensure opportunities for new voices to participate.

5.2.2.5 Voting Prowess

As the representative of SCC holders, it is vital that this seat holds voting rights. This seat should also have opportunities to engage with non-voting advisors.



5.2.3 Natural Asset Manager

5.2.3.1 Expertise

The board should include a seat reserved for a member with explicit expertise in ecology, conservation, landscape design, biodiversity, or a related field. Complementary expertise in areas such as law, planning policy, land development, finance, academia, or health is also valuable. Governance models from Ducks Unlimited Canada and TRCA show that boards can include environmental expertise while maintaining diverse professional representation (Ducks Unlimited Canada, 2018; Toronto and Region Conservation Authority, n.d.).

5.2.3.2 Authority

This seat would use their expertise to guide the acquisition, stewardship, and management of parks and natural assets, ultimately helping ensure that board decisions align ecological integrity with financial and community objectives. The person occupying this seat would ideally work in tandem with the Indigenous representation seat, recognizing the limits of knowledge from Western environmental worldviews.

5.2.3.3 Selection Process

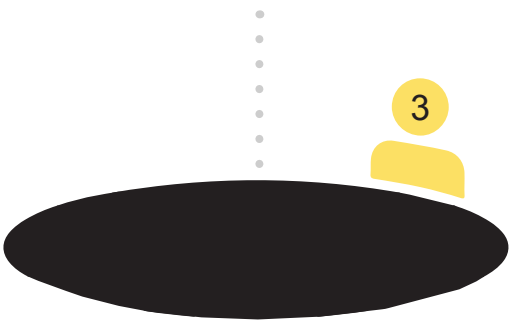
Selection should be managed through nomination by peers or a committee, evaluated based on professional and technical contributions, and confirmed through a broader membership vote. This combines the expertise-driven focus of organizations such as the TRCA and IPCC, with the democratic rigor of the Bruce Trail Conservancy, and the John Muir Trust (Bruce Trail Conservancy, n.d.; IPCC, n.d.; John Muir Trust, n.d.; Toronto and Region Conservation Authority, n.d.). Self-nomination is typically prohibited to maintain fairness and integrity.

5.2.3.4 Sitting Term

The person occupying this seat should be non-permanent. Experts should serve a set number of years within a term to maintain fresh and independent perspectives. An appropriate number of terms should be established for the seat. Some organizations, such as the Bruce Trail Conservancy and Huron Tract Land Trust Conservancy, limit seat holders to two terms, while others, like Ducks Unlimited Canada, allow additional terms following review or re-nomination (Bruce Trail Conservancy, n.d.; Ducks Unlimited Canada, 2018; Huron Tract Land Trust Conservancy, n.d.).

5.2.3.5 Voting Prowess

The Natural Asset Manager should be a voting member of any PARK+ governance board, reflecting the importance of their role as chief steward of the park and its assets. This seat would also benefit from additional non-voting advisors. Similar governance models can be found in organizations such as the TRCA, which incorporates advisory roles meant to inform voting board members (Toronto and Region Conservation Authority, n.d.). This prevents technical governance from being dominated by a single perspective and supports inclusion of non-institutionalized professionals, such as local experts, residents, and students.



5.2.4 Resident and Community Representative

5.2.4.1 Expertise

Community members possess on-the-ground knowledge that other stakeholders and decision-makers may lack (Johnson et al., 2009). Their experiences within their community, and their relationships with their fellow residents provide them with important knowledge to be applied in governance. Additionally, as a representative of the community committee, the community representative will receive input and advice from a diverse range of community members that will inform their votes and exercise of power on the board.

5.2.4.2 Authority

Community representatives possess important social capital necessary for effective liaising between the community and decision-makers (Johnson et al., 2009). They can serve as important components of bridging disconnects between the community and other stakeholders involved in governance (Johnson et al., 2009). Their presence in the community, and their social capital, helps build trust in ways that external decision-makers often cannot. This helps form the basis of their authority, but it must be legitimized through the selection process.

5.2.4.3 Selection Process

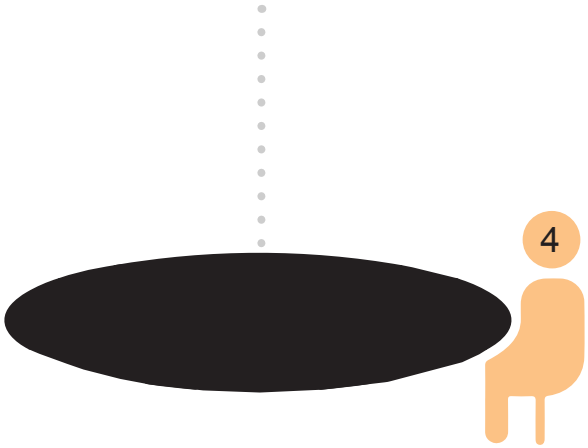
The community representative shall be appointed by the Community Committee, consisting of community members that lead and participate in community engagement and programming efforts in the park. As the voting arm of the community, it is important that the community representative be accountable to the community to maintain trust and transparency (Trust For Public Land, 2023). This accountability can be established through regular reviews and reports to the community, as well as through democratic appointment processes.

5.2.4.4 Sitting Term

The community representative should have term limitations to maximize opportunities for participation from other members of the community in the governance process, as well as to ensure accountability to the community throughout the course of their tenure. The exact term limits should be voted on and determined by the community through the community committee.

5.2.4.5 Voting Prowess

A designated community representative should hold a voting seat on the PARKS+ board to represent the community's many voices and help advance the community's needs and priorities through governance. The appointed representative in this seat should serve as a representative of the broader community committee, and should receive guidance and consultation from the committee on voting matters where appropriate.



5.2.5 Indigenous Representative

5.2.5.1 Expertise

The person occupying this seat should bring expertise grounded in Indigenous relationships to land, stewardship, and community priorities. Parks Canada examples show the value of this expertise in practice. In Banff National Park, the Indigenous Advisory Circle helps inform park decisions by bringing Indigenous knowledge and perspectives to challenges and opportunities affecting the park (Parks Canada, 2024). In Rouge National Urban Park, the First Nations Advisory Circle works collaboratively with Parks Canada on archaeological fieldwork, restoration projects, visitor experience initiatives, and Indigenous design elements (Parks Canada, 2025a, 2025b, 2022).

5.2.5.2 Authority

The Indigenous representative should serve as a voting member of the governing board and participate in major decisions related to stewardship, programming, land use, partnerships, and long-term strategy. While the Banff and Rouge examples discussed above provide useful precedents for Indigenous advisory structures within park governance, the PARKS+ model should go a step further by giving this position a formal decision-making role on the board.

5.2.5.3 Selection Process

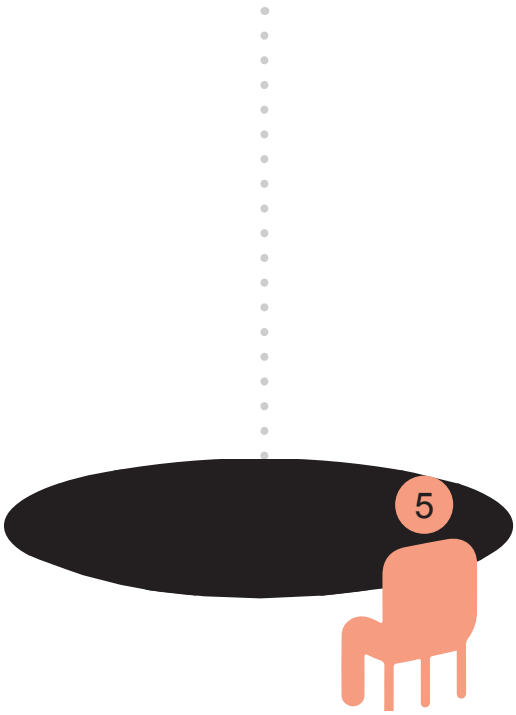
The Indigenous representative should be selected through a process led by Indigenous communities and organizations with ties to the land. The exact method of selection, whether through nomination, consensus, election, or another community-led approach, should be determined by those communities and organizations.

5.2.5.4 Sitting Term

The person occupying this seat should be non-permanent to ensure opportunities for new voices to participate over time. When the seat is established, the Indigenous communities and organizations responsible for the selection process should determine the term length and number of terms the representative can serve in the position.

5.2.5.5 Voting Prowess

An Indigenous representative should hold a voting seat on the PARKS+ governing board to ensure Indigenous perspectives are meaningfully included in governance and decision-making. This would support effective Indigenous participation in decision-making rather than limiting the role to an advisory function. Where appropriate, this seat could also be supported by additional non-voting Indigenous advisors or advisory circles.



5.2.6 Municipal Representative

5.2.6.1 Expertise

The municipal representative seat is intended to be occupied by a city councillor, municipal staff member, or planning professional. The individual should possess expertise in urban planning, infrastructure delivery, public policy, or municipal governance. This will ensure the board discussions are informed by current municipal policies and priorities, frameworks, and realities.

5.2.6.2 Authority

The seat serves as an ex-officio capacity role and holds no formal decision making authority. The role is to be advisory, provide guidance, recommendations, and strategic input aligned with municipal interests. This position will facilitate coordination between the governance board and municipal frameworks while keeping the board independent.

5.2.6.3 Selection Process

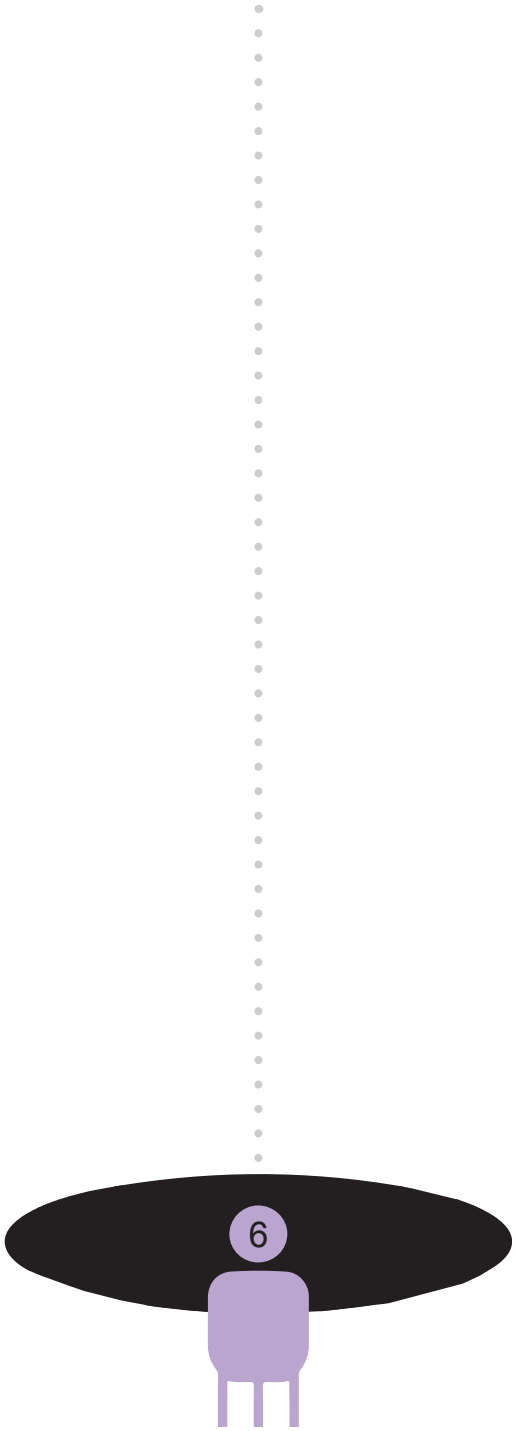
It is a voluntary appointment of an elected official, such as a city councillor or municipal representative. The appointment can take place in conjunction with the municipality to ensure alignment of relevant departments or strategic priorities.

5.2.6.4 Sitting Term

The seat should be held for defined, limited terms, with periodic rotation to balance flexibility and continuity. This is particularly relevant for this seat, as it accounts for elected official turn over.

5.2.6.5 Voting Process

The municipal board member does not possess voting rights on the governance board. Participation is limited to discussion, advisory input, and recommendations that ensure the municipal perspective is integrated without taking direct control over board decisions.



5.2.7 BIA Representative

5.2.7.1 Expertise

A representative of the local business community can serve to represent the voices of local businesses as they pertain to the governance of the biodiverse park. Given the impacts parks can have on local business sales and viability (Park & Kim, 2019), the small business community can provide important input in a voting seat on the PARKS+ governance board.

5.2.7.2 Authority

The local business representative can advance the interests, priorities, and concerns of the broader business community to ensure governance considers economic impacts and the business community's relationship to the park. This authority must operate within the constraints of the board's collective decision-making.

5.2.7.3 Selection Process

The representative of the business community can be appointed by the local Business Improvement Area (BIA), given the BIAs existing ties to the local business community and the established relationships. In the absence of a formally established BIA in the community, the community committee can conduct engagement with local businesses to find alternative means of appointing a representative.

5.2.7.4 Sitting Term

The business community representative should have a term limit defined by the appointing bodies. In the event that another prospective representative does not express interest in fulfilling the duties of the role, the appointing bodies can reappoint beyond the term limit.

5.2.7.5 Voting Prowess

The business community representative should hold voting power of one seat on the board, and should promote the interests of local businesses as they pertain to the governance of the park.

5.3 Perpetuity Tools

To govern over the biological assets of parks effectively and in perpetuity, a set of KPIs were developed. These KPIs are informed by an extensive literature review on what constitutes a biodiverse asset, as well as strategies to enhance connectivity, climate resiliency, and human benefits.

The PARKS+ model recognizes that not all KPIs are applicable to every park. It is also realizes that effective governance requires understanding which indicators are relevant for guiding stewardship toward specific outcomes. As such, these KPIs should be implemented and monitored by the relevant authorities chosen to govern and/or advise on the governance of the parks.

The following KPIs are categorized into:

(1) Biodiversity KPIs

(2) Connectivity KPIs

(3) Climate Resiliency KPIs

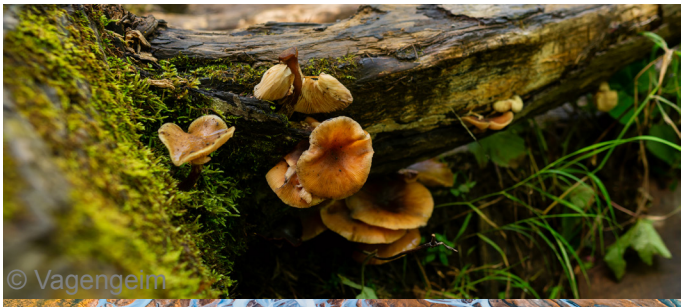
(4) Mental Health KPIs

(5) Physiological Health KPIs

(6) Community Building KPIs

The indicators under each category are presented at a high level, outlining what is being measured, why it is being measured, and the tools or methods used for assessment.

1



2

3

4

5

6

5.3.1 Biodiversity KPIs

5.3.1.1 General Biodiversity

The general biodiversity KPI measures the number of individuals per species and the total number of different species present within the park. High species richness boosts ecosystem productivity through more efficient and complementary resource use between species, while high abundance provides resilience against environmental stressors caused by urbanization and supports ecosystem services (Berendse et al., 2015; Song et al., 2019; Paudel et al., 2025).

This can be assessed through:
- Field surveys
- Camera monitoring
- Species inventories
- GIS mapping

5.3.1.2 Percentage of Native Vegetation

The percentage of native vegetation measures the share of planted species present and/or added that are native to the local ecosystem. Native vegetation supports local species, enhances habitat structure and biodiversity, strengthens food webs, and improves ecosystem functioning (Parris et al., 2018; Chan et al., 2021). Native and climate-adapted plants can also reduce irrigation needs and maintenance requirements (Lehmann, 2021).

This can be assessed through:
- Native tree and understory planting (%)
- Native perennial flowers planting (%)
- Native grass planting (%)
- Native non-vascular groundcover planting (%)
- Native riparian and aquatic vegetation planting (%)
- GIS mapping

5.3.1.3 Percentage of Invasive or Redundant Vegetation Replaced

The percentage of invasive or redundant vegetation replaced measures the proportion of harmful and low-functioning vegetation removed and/or replaced with ecologically beneficial species. Removing these restores native habitat function and increases biodiversity, as invasive species, lawns, and other low-value vegetation provide limited ecological benefit (Lister & Careri, 2025; Houston et al., 2023).

This can be assessed through:
- Annual removal inventories and logs
- Invasive species mapping
- GIS mapping

5.3.1.4 Habitat Provision Richness and Abundance

Habitat provision measures the diversity and abundance of structural habitat elements that provide nesting, breeding, feeding, and shelter opportunities. Biodiversity is strongly influenced by habitat structure, with structurally complex habitats supporting multiple species through the provision of diverse microhabitats (Spotswood et al., 2019; Parris et al., 2018).

This can be assessed through:
- Wetland area (m²)
- Substrate provision (m²)
- Hydrology studies
- Leaf litter and woody debris (m² or volume)
- Vegetation cover (m²)
- Soil bioactivity
- GIS mapping

5.3.2 Connectivity KPIs

5.3.2.1 Proximity to Other Biodiverse Spaces

Park proximity measures the physical distance between a site and other biodiverse areas—both within the PARKS+ network and at external sites of particular relevance. Shorter distances improve species dispersal and genetic exchange, reduce mortality, highlight isolation in fragmented urban areas, and help the creation of ecological corridors (Beckmann et al., 2010).

This can be assessed through:
- Measuring distance between sites
- GIS mapping

5.3.2.2 Asset Size

Asset size measures the total area of the park. Larger parks generally support greater species richness and reduce edge effects, thereby enhancing habitat quality (Lynch, 2019).

This can be assessed through:
- Measuring the total area of the asset and its habitats (m²)
- GIS mapping

5.3.2.3 Asset Form

Asset form measures direct (corridor) and indirect (stepping-stone) connectivity of habitational spaces. Continuous habitat enables safe movement, reduces mortality, and facilitates genetic exchange (Beckmann et al., 2010; Hilty et al., 2020).

This can be assessed through:
- GIS mapping
- Evaluation of habitat continuity
- Analysis of multi-level connectivity across vegetated, soil, and aquatic layers

5.3.2.4 Fragmentation Reduction

Fragmentation reduction measures the amount of habitat that has been reconnected by the park. The interconnectedness of different species highlights the need to reduce landscape fragmentation, as its impacts may be greater than expected (Lister et al., 2015). Reducing fragmentation decreases road mortality, improves habitat continuity in areas with high impermeable surfaces, and helps identify the root causes of the issue (Blaauw & Isaacs, 2014; Correa Ayram et al., 2016).

This can be assessed through:

- Measuring changes in impermeable surface coverage (%)
- Tracking the abundance and diversity of wildlife crossings (count)
- Identifying and addressing barriers to continuity

5.3.3 Climate Resiliency KPIs

5.3.3.1 Carbon Sequestration Capacity

Carbon sequestration capacity measures the amount of carbon captured from the atmosphere and stored in plant biomass and soil. Carbon sequestration mitigates greenhouse gas emissions, improves the local microclimate, strengthens the carbon cycle, and aligns private development with municipal, provincial, and federal climate goals (CIRSO Ecosystem Sciences, 2014).

This can be assessed through:

- Tracking biomass carbon sequestration (tonnes CO2e/year)
- Tracking soil carbon sequestration (tonnes CO2e/year)

5.3.3.2 Air Quality Improvement Capacity

Air quality improvement capacity measures the amount of gaseous and particulate pollutants absorbed or captured by the park. Improving air quality reduces cardiovascular and respiratory health risks and decreases reliance on mechanical filtration systems (Lehmann, 2021; Dümpelmann, 2020).

This can be assessed through:

- Tracking the mass of pollutants and particulates removed (kg/year)

5.3.3.3 Urban Heat Regulation Capacity

Urban heat regulation capacity measures the change in land surface temperature before and after PARKS+ interventions or between a PARKS+ park and municipal park. Reducing surface temperatures addresses the urban heat island effect, decreases reliance on air conditioning, and enhances microclimate regulation (Lehmann, 2021; Jha et al., 2024; Paudel et al., 2025).

This can be assessed through:
- GIS mapping
- Temperature measurements (municipal weather station readings and fixed sensors before and after)
- Shade coverage (%)
- Evapotranspiration rates (mm/day)

5.3.3.4 Stormwater Retention Capacity

Stormwater retention capacity measures the volume of stormwater retained or infiltrated by the park. Ecological stormwater management mitigates flooding risk, supports aquifer recharge, increases infiltration, and reduces the burden on grey infrastructure (Chan et al., 2021; Lehmann, 2021; van Rees et al., 2023).

This can be assessed through:
- Tracking runoff volume captured (m^3/year)
- Measuring peak flow reduction (%)
- Permeable surfaces on the site (%)

5.3.3.5 Water Quality Improvement Capacity

Water quality improvement capacity measures the volume of water treated by vegetation and soil within the park. Water filtration improves aquatic ecosystem health, reduces eutrophication and salinification, decreases strain on grey infrastructure, and lowers the risk of waterborne illness (Lehmann, 2021; Rottle et al., 2011).

This can be assessed through:
- Tracking the volume of water filtered (litres)
- Measuring removal of excess nutrients, pollutants, and sediments
- Monitoring microbial health

5.3.3.6 Asset Maintenance Efficiency

Maintenance efficiency measures the time and money saved by investing in a self-sustaining, resilient asset. Investing in local and climate-adapted nature-based solutions directly reduces maintenance, water use, and chemical input costs (Lehmann, 2021; Paudel et al., 2025).

This can be assessed through:
- Tracking costs of replacing diseased plants ($)
- Measuring water saved using climate-adapted plants ($/L)
- Recording labour hours saved ($/year)
- Monitoring fertilizer and pesticide use ($)

5.3.4 Mental Health KPIs

5.3.4.1 Reduced Stress

Reduced stress measures the reduction in stress associated with increased time spent near or within the park. Exposure to ecological spaces can reduce stress and lead to improvements in mental and psychological health (Ulrich et al., 1991; Bianchi et al., 2024). The inverse is also true, as without access to nature, people can decline physically and mentally (Shuda et al., 2020).

This can be assessed through:

- Reports from covenant holders and tenants on perceived stress reduction

5.3.4.2 Improved Cognitive Function

Improved cognitive function measures improvements in attention restoration and memory performance with increased time spent near or within the park. Exposure to ecological spaces enhances cognitive function (Kaplan, 1995), acted out by replenishing depleted mental resources (Mason et al., 2022), and improving performance on executive tasks that place high demands on directed attention (Stenfors et al., 2019).

This can be assessed through:

- Reports from covenant holders and tenants on perceived improvements in cognitive performance

5.3.4.3 Reduced Depression

Reduced depression measures the reduction in depressive symptoms with increased time spent near or within the park. Exposure to ecological spaces has been linked to significant declines in depression and anxiety (Zhang et al., 2024).

This can be assessed through:

- Reports from covenant holders and tenants on perceived improvements in mental well-being

5.3.5 Physiological Health KPIs

5.3.5.1 Cardiovascular Health

Cardiovascular health measures improvements in heart and circulatory system function with increased time spent near or within the park. Access to ecological spaces has been associated with lower cardiovascular mortality and improved cardiovascular health outcomes (Kondo et al., 2018; Giacinto et al., 2021).

This can be assessed through:
- Reports from covenant holders and tenants on resting heart rates (bpm)
- Reports from covenant holders and tenants documenting frequency of physical activity

5.3.5.2 Cardiometabolic Health

Cardiometabolic health measures improvements in metabolic conditions associated with increased time spent near or within the park. Increased ecological space exposure is associated with improved cardiometabolic risk factors such as obesity and blood glucose levels (Sharifi et al., 2024).

This can be assessed through:
- Reports from covenant holders and tenants tracking diabetes and obesity prevalence rates
- Reports from covenant holders and tenants monitoring frequency of physical activity

5.3.5.3 Respiratory Health

Respiratory health measures improvements in respiratory function associated with increased time spent near or within the park. Urban vegetation can improve air quality by filtering harmful pollutants (Lehmann, 2021), with the effect of ecological parks increasing with connectivity and size (Li et al., 2025).

This can be assessed through:
- Reports from covenant holders and tenants tracking prevalence rates of asthma and other respiratory illnesses
- Reports from covenant holders and tenants measuring lung capacity

5.3.5.4 Thermoregulation Capacity

Thermoregulation capacity measures how the park helps people maintain safe body temperature. Vegetation can mitigate heat islands, thereby improving thermal comfort (Lehmann, 2021; Jha et al., 2024). This function aligns with growing interest in thermal comfort guidelines for parks (City of Toronto, 2025).

This can be assessed through:
- Reports from covenant holders and tenants measuring health during extreme heat events
- Comparing site temperatures to surrounding areas

5.3.6 Community Building KPIs

5.3.6.1 Visitor Numbers

Visitor numbers measure the number of people visiting the park or site over a given period. Tracking visitor counts helps assess public engagement, recreational use, and the social value of the park. Useful in developing programming and determining when human presence interferes with biodiversity.

This can be assessed through:

- Using a physical or digital entrance counter device to track visitor numbers
- Assigning individual user ID to track reoccurring visitors

5.3.6.2 Organization Buy-in

Organization buy-in measures the number of organizations, institutions, or community groups that formally support or participate in park stewardship and initiatives. Organization buy-in demonstrates collaborative governance, community investment, and the longevity of the park.

This can be assessed through:

- Tracking organization sign-ups
- Monitoring participation in meetings
- Recording donations (monetary, resources, and manpower)

5.3.6.3 Organization Turnover

Organization turnover measures the amount of time an organization, institution, or community group remains engaged or involved with the park. This is important because it can indicate organizational engagement stability and prompt engagement changes.

This can be assessed through:

- Tracking organization sign-on and sign-off dates
- Monitoring what type(s) of organization sign-on and off

5.3.6.4 Number of Community Capacity-Building Events

Community capacity-building events measure the number of community events held at the park over a given period. Community events foster public engagement, offer educational opportunities, and enhance community stewardship.

This can be assessed through:

- Counting the number of events held

5.3.6.5 Growth of Attendees to Community Capacity-Building Events (Year 1)

Initial attendee growth measures the actual number of people participating in community events. Emphasis is placed on year 1 attendance to generate a short-term engagement baseline, which later on can be used to assess interest and outreach needs.

This can be assessed through:

- Tracking attendance numbers
- Surveys or feedback forms

5.3.6.6 Growth of Attendees to Community Capacity-Building Events (Year Over Year)

Year over year attendee growth measures the actual number of people participating in community events in consecutive years. Emphasis is placed on year over year attendance to measure long-term engagement trends. This information can be used to develop long-term interest and outreach strategies.

This can be assessed through:

- Tracking attendance numbers
- Surveys or feedback forms

These KPIs serve as a resource pool for managing parks under the PARKS+ model, offering multiple pathways to achieve the core ecological, social, and health outcomes of each site. As the need arises, they should additionally be updated to reflect the lifecycle of the park and its associated community.

6.0 APPLICATION OF PARKS+

6.1 Applicability Matrix and Criteria

Throughout the PARKS+ research process, opportunities emerged to apply the framework to the **(1)** YZD Runway project, **(2)** Thickson's Woods, and **(3)** Allan Gardens.

To assess which sites are most suitable for the application of the PARKS+ governance model, an applicability matrix was developed using seven criteria. Rather than selecting sites interested in CEF application, the matrix provides a consistent framework for comparing sites based on the characteristics that most strongly influence the feasibility and value of a PARKS+ application.

These criteria can be used on future sites to identify how well the model applies itself to the physical, social, and institutional conditions of the site.

1

2

3

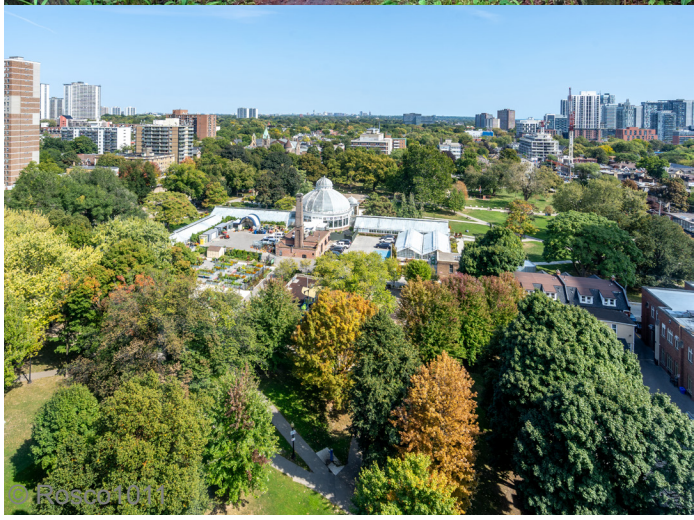


Figure 9. Three real-world sites were fitlered through the PARKS+ model.

x = Score of 0, Criterion is not applicable to the site.
~ = Score of 1, Criterion is partially applicable to the site.
o = Score of 2, Criterion is fully applicable to the site.

Site Applicability Matrix

Site	Nature-Based Infrastructure	Biophilic Assets	Private Property	Development Pipeline	Extended Community	Immediate Community	Immediate Others
YZD	~	~	o	o	o	~	~
Thickson's Woods	o	o	o	x	o	x	o
Allan Gardens	~	o	x	o	o	o	o

Table 1. The chosen sites were evaluated using a seven-point applicability matrix.

6.1.1 Nature-Based Infrastructure

The PARKS+ model is grounded in the concept of a nature premium, which is partly derived from the performance of nature-based infrastructure. To justify a property-based charge, this infrastructure delivers passive services such as air filtration, temperature regulation, and stormwater management. For the PARKS+ model to be applicable, a site must be capable of adopting, containing, and maintaining nature-based infrastructure that raises property value.

6.1.1.1 Allan Gardens

Score of 1, Criterion is partially applicable to the site.

Allan Gardens demonstrates potential for investment in nature-based infrastructure; however, its location in the urban core of Toronto limits the overall size, connectivity, and ecological performance of future systems. The site is currently centred around the conservatory, which houses plant species from across the world. The functions of these plants are primarily aesthetic and recreational, rather than contributing to site-scale ecosystem services. Existing elements, such as mature trees, contribute to ecosystem services, including shade provision, air filtration, and preliminary stormwater capture. Additionally, the site contains a significant grass area, which presents an opportunity for rewilding. Transitioning this space to a natural landscape could enhance surface runoff filtration, improve air quality, and reduce maintenance requirements. A buried creek is also running beneath the site. Restoring this landscape

feature could significantly strengthen the site's capacity for water management, pollutant filtration, and carbon sequestration.

6.1.1.2 Thickson's Woods

Score of 2, Criterion is fully applicable to the site

Thickson's Woods is an ideal site, ecologically, to realize the potential for the PARKS+ model. It is a large, contiguous site totalling 25 acres. It contains three blended landscapes: a forest, 8 1/2-acre meadow, and Corbett Creek Marsh (Thickson's Woods Land Trust, n.d. b). The preservation of forested groundcover, wetland areas, and permeable soils enables effective stormwater infiltration and supports natural filtration of surface runoff, including pollutants and noise from nearby trucking and industrial activity (Thickson's Woods Land Trust, n.d.b). These ecological assets provide a range of important ecosystem services. They can stabilize the shoreline and soils along Lake Ontario, helping to reduce erosion and unnecessary sedimentation. The forest, meadow, and wetland can contribute to localized cooling, mitigating heat from nearby industrial and high-albedo land uses. They can improve air quality and support carbon regulation. Additionally, these landscapes can function as low-maintenance, climate resilient assets.

6.1.1.3 YZD

Score of 1, Criterion is partially applicable to the site

The YZD Runway is a contiguous 370-acre site, which provides immense potential for an interconnected park network. However, there is nothing on site yet, with plans for developing it over the next 30 years. Michael van Valkenburgh Associates (MVVA), winners of the YZD Runway Roadmap, bring extensive experience in transformative urban landscapes, including Brooklyn Bridge Park, Maggie Daley Park, Corktown Common, and the Port Lands Flood Protection project. MVVA's conceptual renderings for YZD emphasize tree coverage and impermeable surfaces to enhance ecological performance (Landau, 2025), which would help regulate microclimates and filter both air and water. YZD sits at the meeting point of the Humber and Don River watersheds, so water management is crucial. Existing airport hangars will be repurposed with green roofs designed to absorb rainwater, reduce flood risk, and enhance biodiversity. Strategic planting and bioswales will also be introduced to maximize stormwater absorption, mitigating downstream flood risks (Lewis, 2025).

6.1.2 Biophilic Assets

A biophilic asset is a feature that connects people with nature to improve well-being, ecology, and overall experience. PARKS+ functions partially on the value people place on their relationship with nature. For the PARKS+ model to operate effectively, the site needs to be capable of supporting biophilic assets presently or in the future.

6.1.2.1 Allan Gardens

Score of 2, Criterion is fully applicable to the site.

Allan Gardens, true to its name, contains six horticultural gardens housed within multiple greenhouses attached to a central conservatory. These include arid, tropical, palm, equatorial orchids and bromeliads, and a temperate biome which includes seasonal flower shows. These discrete biomes are the major biophilic attraction for visitation to the urban park, appealing to those who adore plants from many

different global regions. Currently, the park is looking to expand the number of functional greenhouses while not losing any greenspace (14 acres, or about 2 large city blocks). Other biophilic assets within the park include the mature trees that line the perimeter of the site. Where biophilia is concerned, Allan Gardens is able to improve overall wellness through the satisfaction of one's yearning for nature through passive engagement with the trees scattered throughout the park, as well as appease one's curiosity through active exploration of the wild plant life from other global biomes in the various greenhouses on site.

6.1.2.2 Thickson's Woods

Score of 2, Criterion is fully applicable to the site.

Thickson's Woods contains the last remnant of old-growth white pines on the north shore of Lake Ontario (Thickson's Woods Land Trust, n.d.). Once reserved for masts of sailing ships of the British Royal Navy, the towering pines provide a vital resting place for countless migrating songbirds each spring and fall (Thickson's Woods Land Trust, n.d.). Thickson's Woods is a premier birding spot in Ontario due to its vast size, density of biodiversity, and proximity to Lake Ontario. It boasts 323 species of birds, as well as numerous species of bats, moths, vascular plants, and other wildlife that inhabits these woods. This biodiversity contributes to the attraction of visitors from around the world, resulting in full applicability of a biophilic asset draw within the site.

6.1.2.3 YZD

Score of 1, Criterion is partially applicable to the site.

YZD is in a developmental stage that is allocating two large parcels of land within the site to be potential parkland. This potential is what provides the partial applicability of the biophilic asset; it may change upon project completion. Where it may not exist today, the neighbouring Downsview Park, currently, has recorded rich biodiversity within its boundary. Birding is popular in this area, boasting over 200 recorded bird species sightings and 888 different species sightings of wildlife overall. This allows for the interpretation that an expanded ecological corridor/area will also expand the potential for observance of wildlife, greatly improving the biophilia associated with YZD.

6.1.3 Private Property

This criterion assesses whether the site is located on privately owned land, and whether its ownership context could support the PARKS+ CEF model. Sites under private ownership may offer more direct opportunities to implement a PARKS+ CEF and related SCC arrangement.

6.1.3.1 Allan Gardens

Score of 0, Criterion is not applicable to the site.

Allan Gardens is a City-owned public park and conservatory. If a PARKS+ CEF model were to be considered here, it would need to be pursued in partnership with the City of Toronto.

6.1.3.2 Thickson's Woods

Score of 2, Criterion is fully applicable to the site

Thickson's Woods is held by the Thickson's Woods Land Trust, a charitable organization formed to acquire and permanently protect the site as a nature reserve. (Thickson's Woods Land Trust, n.d.a). Any CEF model considered for the site would likely need to work

in partnership with the trust.

6.1.3.3 YZD

Score of 2, Criterion is fully applicable to the site

YZD is the redevelopment project now being built on the former Downsview Airport lands. In 2018, the Public Sector Pension Investment Board (PSP) purchased the 370-acre former airport site from Bombardier and established Northcrest Developments, a wholly owned PSP subsidiary, to lead the redevelopment (Northcrest Developments, n.d.a). As a large privately controlled redevelopment project with major future development planned across the site, YZD strongly aligns with the PARKS+ CEF model.

6.1.4 Development Pipeline

Value capture from property uplift in the PARKS+ model depends on surrounding growth. For a site to function effectively, the nearby development pipeline must exist and ideally by deep.

6.1.4.1 Allan Gardens

Score of 2, Criterion is fully applicable to the site

According to the City of Toronto development application portal, there are several applications for development around Allan Gardens consisting of high-rise and mixed-use developments.

6.1.4.2 Thickson's Woods

Score of 0, Criterion is not applicable to the site

Thickson's Woods is located near employment land uses and has some residential private property located adjacent to the Woods. However, there are no projects in the pipeline to change the real estate around Thickson's Woods. Furthermore, businesses located near Thickson's Woods plan to stay.

6.1.4.3 YZD

Score of 2, Criterion is fully applicable to the site

YZD has a strong development pipeline. The scale of planned development offers a substantial pool of future projects and strong potential for value uplift capture, making it well suited for an SCC.

6.1.5 Extended Community

Extended Community refers to the broader groups that may have a stake in the site beyond those living directly adjacent to it. This can include residents from the surrounding neighbourhoods, future users, advocacy groups, city-wide visitors, or communities connected through cultural, ecological, or recreational relationships. Including this criterion recognizes that many urban parks and open spaces have benefits that extend beyond their immediate boundaries, and that governance structures should reflect broader patterns of use and interest.

6.1.5.1 Allan Gardens

Score of 2, Criterion is fully applicable to the site

Allan Gardens scores highly under the extended community criterion due to its city-wide significance and ability to attract visitors beyond its immediate neighbourhood. As a historic public space and home to one of the only free-access conservatories in Ontario, the site serves as a unique destination that

draws individuals from across Toronto and beyond. Programming and events hosted at the site, such as art and music initiatives, further reinforce its role as a gathering space for diverse audiences, expanding its reach to wider communities and interest groups (Aksich, 2025). Within the PARKS+ governance framework, this extended community becomes an important consideration, as it represents a broader base of stakeholders who benefit from and contribute to the site's value. Recognizing these users within governance structures supports more inclusive decision-making and helps justify investment in long-term stewardship, programming, and ecological enhancement. It also highlights the need for governance mechanisms that extend beyond hyper-local engagement, ensuring that the interests of city-wide users, visitors, and cultural participants are meaningfully accounted for alongside those of immediate residents.

6.1.5.2 Thickson's Woods

Score of 2, Criterion is fully applicable to the site

Thickson's Woods is located roughly 2.5 kilometres from the nearest residential subdivisions. Thus, the extended community consists of visitors to Thickson's Woods and users of the portion of the Waterfront Trail that runs through the woods. As such, Thickson's Woods receives a score of 2 for Extended Community. The users and visitors to Thickson's Woods benefit from access to the trails and the ecological corridor, as well as the connections the trail provides to neighbouring communities and the nearby industrial lands. Within the PARKS+ governance model, the extended community of users within Durham Region can be engaged to build community capacity to participate in governance. This can help ensure that regular users are reflected in the governance and stewardship practices at Thickson's Woods.

6.1.5.3 YZD

Score of 2, Criterion is fully applicable to the site

YZD scores highly under the extended community criterion because it is planned as a large mixed-use redevelopment whose public spaces are expected to serve a much broader public than the site's immediate neighbours. Project materials describe YZD as a 370-acre redevelopment centred on the former runway, with multiple new neighbourhoods, parks, and community spaces intended for future residents, workers, and visitors across Toronto (Northcrest Developments, n.d.b; Northcrest Developments, n.d.c). Northcrest also states that more than 80,000 individuals and 180 groups have been involved through public consultation, and that the site already hosts events, art installations, and cultural programming (Northcrest Developments, n.d.c; Northcrest Developments, n.d.d).

6.1.6 Immediate Community

Immediate Community, focuses on those who live closest to the site and are most directly affected by its design, use, programming, and maintenance. These individuals and households experience the everyday impacts of governance decisions most directly, whether through access, stewardship opportunities, or changes in neighbourhood characteristics. Their inclusion as a distinct criterion emphasizes the importance of grounding governance in local lived experience and place based accountability.

6.1.6.1 Allan Gardens

Score of 2, Criterion is fully applicable to the

site.

These residents include a mix of housed community members, unhoused individuals, and Indigenous groups who have used the space for gathering and protest, reflecting a range of relationships to the park that are at times complementary and at times conflictual. The site has notably been the location of organized protest and encampments, highlighting tensions around public space, housing, and rights to the city (Palmer, 2025). This diversity reinforces the importance of a governance model that can meaningfully incorporate multiple voices while navigating competing needs and claims to space. In this context, the Friends of Allan Gardens play a key intermediary role, providing a more accessible and trust-based avenue for engagement, particularly for communities that may have strained relationships with the City. At the same time, the Friends group itself is internally diverse, comprising volunteers, local residents, gardeners, and advocates highlighting the need for governance structures that recognize both the complexity within immediate resident groups and the importance of inclusive, place-based decision-making.

6.1.6.2 Thickson's Woods

Score of 0, Criterion is not applicable to the site.

Thickson's Woods receives a score of zero as there are no immediate residents living adjacent to the site. Adjacent land uses are zoned entirely industrial, with various industrial complexes located in close proximity to the site. With no residential zoning nearby, and no residential developments in the pipeline, there is currently little to no potential for an immediate residential community to sprout up in the coming future. Thus, engagement with residents would be limited to the extended community, including visitors and users to the park.

6.1.6.3 YZD

Score of 1, Criterion is partially applicable to the site

The YZD development at Downsview is being built on a clean, blank slate with no currently existing residents and community, or even a park on the site. Thus, there are no existing residents on the site. However, with large-scale development on the way, YZD receives a score of 1. The PARKS+ governance model seeks to engage community members in governance and stewardship of the park and its natural assets, to ensure the park delivers ecological benefits, ecosystem services, and community development opportunities. Thus,as the development process progresses and the community begins establishing itself and continues to grow, it will be important to develop and expand relationships with the community, and ensure residents and visitors alike are made aware of the opportunities to participate in governance, community initiatives, and research.

6.1.7 Immediate Others

Immediate others captures nearby organizations and entities that interact with the site in direct and ongoing ways. This includes schools, community organizations, small businesses, cultural institutions, places of worship, healthcare facilities, and other local actors whose operations, users or mandates are connected to the space. Their presence can make them important governance partners, particularly where long-term stewardship, programming, education, or co-management opportunities are possible.

6.1.7.1 Allan Gardens

Score of 2, Criterion is fully applicable to the site.

Allan Gardens scores highly under the immediate others criterion due to the concentration of nearby institutions, organizations, and local businesses that actively shape the site's use, stewardship, and cultural significance. The surrounding context includes a diverse network of actors such as Sherbourne Health, Centre for Addiction and Mental Health (CAMH), Toronto Metropolitan University, Native Women's Resource Centre of Toronto, Miziwe Biik Aboriginal Employment and Training, Dixon Hall, as well as cultural and community groups such as Common Boots Theatre and Park People (Friends of Allan Gardens, n.d.). This institutional density reinforces the park's role as a shared space embedded within a broader service, cultural, and social infrastructure network.

The importance of this criterion within a governance framework lies in the opportunities it creates for partnership, co-management, and long-term stewardship. Institutional collaboration is already evident at the site, most notably through the historical donation of one of the conservatories by the University of Toronto, demonstrating how post-secondary institutions can contribute to the development and preservation of park infrastructure (Conservatory Heritage Society, n.d.). These relationships highlight the potential for governance structures that formally integrate nearby organizations into decision-making, programming, and funding strategies. By recognizing immediate institutions as active stakeholders, PARKS+ governance can leverage existing capacities, strengthen cross-sector collaboration, and support more resilient, community-embedded stewardship models.

6.1.7.2 Thickson's Woods

Score of 2, Criterion is fully applicable to the site.

Thickson's Woods is located in close proximity to a variety of industrial and commercial uses, including an Amazon warehouse, a municipal water plant, various wholesale suppliers, and a number of offices. The benefits offered to adjacent properties consist of the improved quality of life experienced by employees working nearby as a result of proximity to nature, and the opportunities to make use of the Waterfront Trail to commute to the workplace. Here, engaging the local business owners and workers should be an important component of the governance process to ensure these groups are given opportunities to participate in governance and stewardship of Thickson's Woods under the PARKS+ model. Organizations currently involved with the site are the Thickson's Woods Land Trust and its conservation partners, including the Durham Region Field Naturalists, Pickering Naturalists, Ontario Nature, and the Ontario Land Trust Alliance (Thickson's Woods Land Trust, n.d.d). The Trust also notes support from volunteers and nearby businesses such as Gerdau Steel in helping care for and improve the site (Thickson's Woods Land Trust, 2020).

6.1.7.3 YZD

Score of 1, Criterion is partially applicable to the site.

While the YZD development currently has no residents, it is in close proximity to key institutions. York University, which presents opportunities for ecological research on the site. Nearby BIAs offer pathways to engage local businesses in park governance and stewardship. The site is also located on the

the traditional territories of the Mississaugas of the Credit First Nation and the Six Nations of the Grand River, making Indigenous engagement essential to align stewardship and programming with Indigenous values and knowledge. Engagement is already underway through the Downsview Indigenous Community Resource Group convened by Northcrest Developments, the City of Toronto, and Canada Lands Company (City of Toronto, 2025).

6.2 Case Study: YZD

YZD is the selected site for testing the recommendations. While it did not score the highest—Allan Gardens received 11 points—its scale and potential for growth are qualities in their own right, making it a worthwhile example.

6.2.1 Governance Principles Application

The seven governance principles for the PARKS+ model act as the first set of tools for perpetual park governance.

6.2.1.1 Long-Term Vision in Decision-Making

The multi-decade timeline for YZD provides an opportunity for governance decisions to prioritize long-term outcomes over short-term development gains.

6.2.1.2 Commitment to Biodiverse Environmental Stewardship

The scale of the YZD runway provides opportunities to design parks for habitat creation, ecological corridors, and restored natural systems, and should therefore be governed accordingly.

6.2.1.3 Community-Centered Impact

YZD is surrounded by a diverse extended community, and will be home to a whole new community in the future. Ensuring future park spaces respond to evolving community needs, access, and cultural use is paramount.

6.2.1.4 Perpetual Stewardship and Protection

Given the long redevelopment timeline, YZD is well suited for a governance model where ecological assets are stewarded and protected in perpetuity.

6.2.1.5 Responsible Financial Stewardship and Bond Repayment

YZD's scale and value uplift potential make it suitable for a governance model in which financial planning is directly tied to ecological and community interest.

6.2.1.6 Value Recapture and Community Reinvestment

YZD is a high-value redevelopment site where property value increases based on the Nature Premium can be captured. A governance model that can facilitate this and reinvest it into the community creates a unique advantage.

6.2.1.7 Transparent and Representative Governance

Transparent, representative, and clearly defined decision-making processes will balance YZD's diverse interests while maintaining accountability to ecological and financial outcomes.

When applied to a site such as YZD, the governance principles show that stewardship and ecological integrity; transparent financial management and reinvestment through the CEF; and meaningful community representation and benefit can be maintained in parallel. These address both tangible costs to developers, such as long-term funding required to maintain the site in perpetuity at a high standard, and intangible costs, including NIMBYism and limited community buy-in. Through good governance, the PARKS+ model helps mitigate these risks.

Figure 10. The YZD Runway project is a site of unprecedented scale, totalling 370-acres.

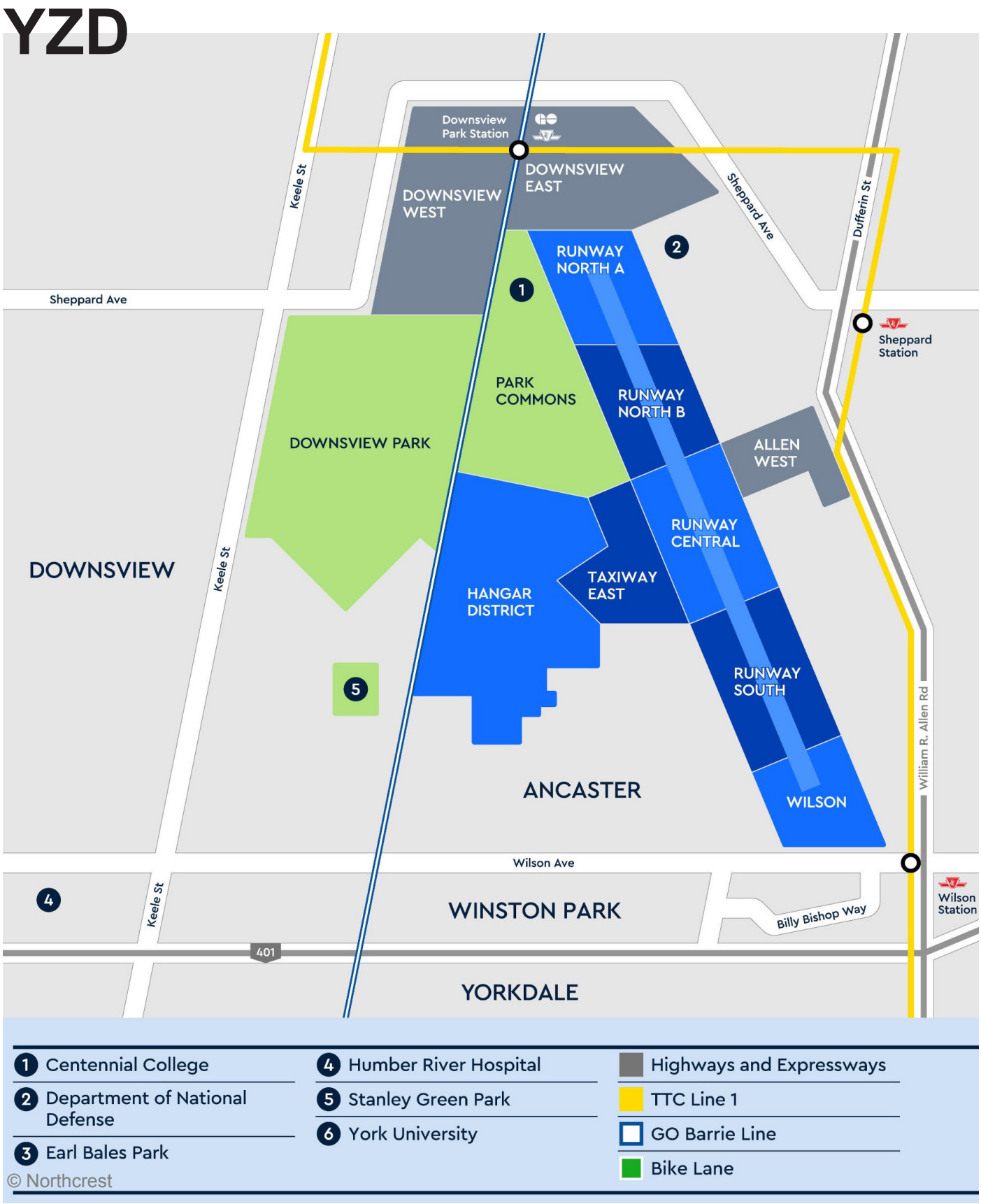


Figure 11. YZD is large-scale mixed-use redevelopment project led by Northcrest Developments.

6.2.2 Governance Board Application

Within the context of YZD, multiple stakeholders align with the PARKS+ model and can strengthen the ecological, financial, and community-based goals of future parks here. The following section highlights possible stakeholders to sit on the five at-large governance board seats.

6.2.2.1 YZD Natural Asset Manager

Teaching staff from the York University Faculty of Environmental and Urban Change are potential Natural Asset Managers for YZD. They offer research capacity and environmental monitoring expertise and are invested in the site's success due to its proximity.

A representative from Ducks Unlimited Canada can alternatively serve as the Natural Asset Manager, bringing specialized knowledge in wetland restoration and habitat creation, and supporting a balance between ecological preservation and human access.

A TRCA employee can also serve as the Natural Asset Manager, bringing regional watershed expertise and experience in large-scale ecological planning, which is particularly relevant given that YZD lies between two of Toronto's largest watersheds: the Humber and Don.

Figure 12. Possible Natural Asset Manager seat holders.

6.2.2.2 YZD Resident and Community Representative

The Resident and Community Representative for the YZD Runway project is currently undetermined, as the site is still being developed. As a result, there is no immediate community from which to draw a representative. Similarly, the extended community will continue to evolve over the proposed 30-year development period. The earliest point at which a Resident and Community Representative could be selected is during the park planning phase—likely drawing from the extended community at that time, and then incorporating members of the immediate community over time.

Figure 13. Resident and Community Representative seat holders are currently unknown.

6.2.2.3 YZD Indigenous Representative

The Indigenous Representative for the YZD Runway project should be appointed through groups with recognized ties to the land. For YZD, this could include Mississaugas of the Credit First Nation, which Northcrest identifies as the Host First Nation to the YZD redevelopment, as well as Six Nations of the Grand River, with whom Northcrest has established an ongoing relationship focused on engagement, project follow-up, and economic opportunities (Northcrest Developments, 2025).

The Downsview Indigenous Community Resource Group (ICRG) could also play an important role in identifying or recommending a representative. The ICRG is convened by the City of Toronto, Northcrest Developments, and Canada Lands Company to provide urban Indigenous-led dialogue, community input, and culturally grounded guidance on Downsview's District Plans, Community Development Plan, and parks and recreational spaces (City of Toronto, 2025a). The ICRG is composed of 16 members representing diverse Nations, genders, ages, and community roles, including First Nations, Métis, Inuit, Elders, Knowledge Keepers, youth, business leaders, cultural leaders, service providers, artists, educators, professionals, and community members (City of Toronto, 2025b).

Figure 14. Possible Indigenous Representative seat holders.

6.2.2.4 YZD Municipal Representative

Although municipal representation can introduce tensions around control and design autonomy, its inclusion is essential to legitimize the innovative nature of this park governance model. Keeping this role strictly advisory helps maintain private interests while demonstrating alignment with municipal priorities. Potential municipal representatives for the YZD Runway project include the councillor for York Centre ward. A councillor would provide political representation, as well as advise on how to align these parks with municipal goals. Furthermore, an entirely new ward may be made out of Downsview to reflect the scale of this development, which means this is another possible representative for the seat.

Alternatively, City of Toronto staff could fill the seat. A Parks, Forestry & Recreation division staff member would advise on the legalities of park design, programming, and maintenance to ensure these parks are up to code. A Environment, Climate & Forestry division staff member would advise on municipal urban ecology, climate resilience, and biodiversity goals and strategies. A City Planning division staff member would similarly provide insight into the legalities of land-use planning to keep parks up to code.

Figure 15. Possible Municipal Representative seat holders.

6.2.2.5 YZD BIA Representative

Potential BIA Representatives for the YZD runway project include the DUKE Heights BIA and the Wilson Village BIA. These are the only two BIAs currently bordering the site and can provide insight into the direction and vitality of the surrounding local economy. A future BIA specific to YZD should also be anticipated, as it would align well with the criteria for this seat.

Figure 16. Possible BIA Representative seat holders, recognizing room for growth.

6.2.3 Perpetuity Tools Application

Applying the perpetuity tools specifically to YZD reveals an even greater emphasis on long-term planning. YZD is not a completed site, and likely will not be finished for another 30 years. The KPIs will have to adapt to the life stages of the future parks and privately-owned public spaces contained within YZD.

Applying the perpetuity tools specifically to YZD reveals an even greater emphasis on long-term planning. YZD is not a completed site, and likely will not be finished for another 30 years. The KPIs will have to adapt to the life stages of the future parks and privately-owned public spaces contained within YZD.

The biodiversity potential of YZD is immense, as its unprecedented size can support the complex and varied habitat structures characteristic of highly biodiverse parks (Spotswood et al., 2019; Parris et al., 2018). Replacing sections of the runway with native and biodiverse vegetation is expected to produce a sharp increase in biodiversity KPI measurements. In the interim, these KPIs can also be used to monitor the ecological health of the site during its 30-year transition.

Connectivity KPIs will play a central role in YZD governance, as the park's large scale supports greater species richness and reduces edge effects, thereby enhancing habitat quality (Lynch, 2019). There are opportunities to monitor both YZD's internal connectivity between its various habitats and its connections to surrounding landscapes, such as the Humber and Don watersheds.

The Climate Resiliency KPIs mesh well with the current climate resilience objectives established by Northcrest.

Mental and Physiological Health KPIs will likely have some difficulty being established as they often require an invested community, one that is willing to share their bodily reactions to the park with Ombrello Solutions. This trust must be developed over time to successfully integrate these specific KPIs into park stewardship. An entirely new community at YZD provides both uncertainty and great potential for something such as this.

The Community Engagement KPIs will adapt to the formation of an entirely new and not yet realized community. They will be extremely important in the first few years of YZD's grand opening. Unlike established neighbourhoods, YZD will not have pre-existing community networks or organizations, making early engagement both more challenging and more critical.

7.0 CONCLUSION

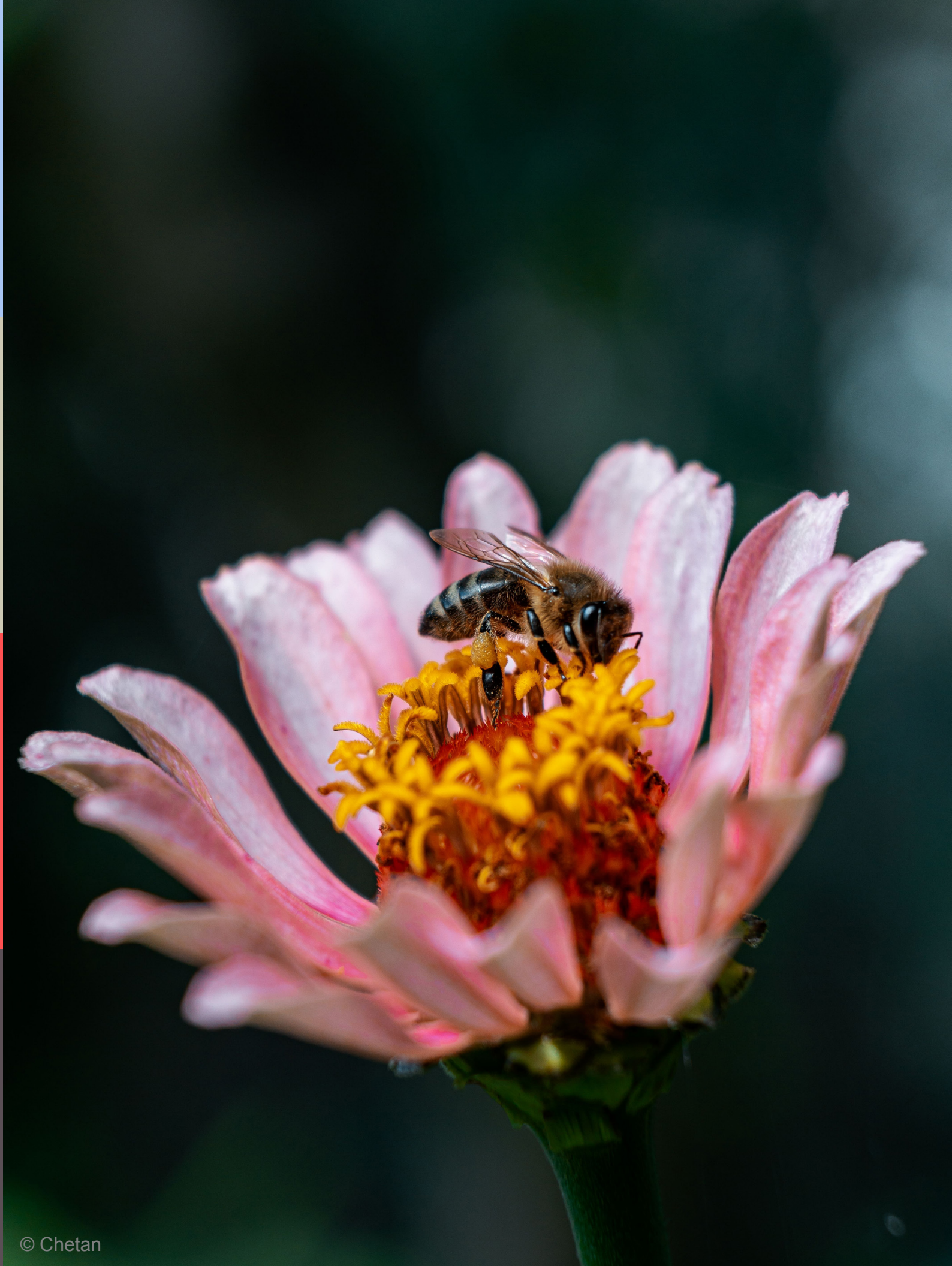
This report has explored how the PARKS+ model, developed in partnership with Ombrello Solutions, responds directly to the conditions outlined at the outset of this project: there is a lack of biodiverse parks in cities, essential to both ecological and human health. Cities such as Toronto are facing a growing need for additional biodiverse parkland. Currently, there is a disconnect between how parks are delivered and the level of performance, resilience, and accessibility they are expected to provide.

The PARKS+ model demonstrates that addressing this disconnect requires more than design solutions alone, it requires an integrated approach to governance and finance. By leveraging the Nature Premium as a value-generating mechanism, and embedding it within a Civic Infrastructure Bond (CIB) and Civic Endowment Fund (CEF) structure, the model creates a system where the ecological and social value of parks can be captured and reinvested over time. In doing so, parks are repositioned from under-resourced public amenities to self-sustaining assets capable of delivering long-term environmental and community benefits.

Central to this approach are a set of governance principles grounded in good governance practices across a variety of bodies, including funds, charities, and trusts. These principles establish the ethos underpinning the subsequent governance components. A flexible, multi-stakeholder governance framework is proposed that brings together ecological expertise, community representation, and financial oversight. This structure ensures that decision-making reflects a balance of long-term ecological integrity, social value, and fiscal responsibility, while remaining adaptable to site-specific contexts. Supported by a KPI-based performance framework, governance is directly tied to measurable outcomes, reinforcing accountability and ensuring the value generated through the Nature Premium is maintained and reinvested.

The application of this model to sites such as YZD, Allen Gardens, and Thickson's Woods illustrates the complexity of implementation. These findings reinforce that successful park delivery depends not only on strong design, but on early and sustained coordination between governance, finance, and stakeholder interests.

Ultimately, the PARKS+ model positions urban parks as essential infrastructure, spaces that support biodiversity, climate resilience, and community well-being, while generating the value needed to sustain themselves in perpetuity. By aligning governance structures with innovative financing tools, Ombrello Solutions offers a scalable and adaptable framework for cities to not only meet the growing demand for parks, but to ensure they perform as high-quality, biodiverse assets over time.



APPENDICES

Appendix A Literature Theming

Appendix B Workshopping

APPENDIX A: Literature Theming

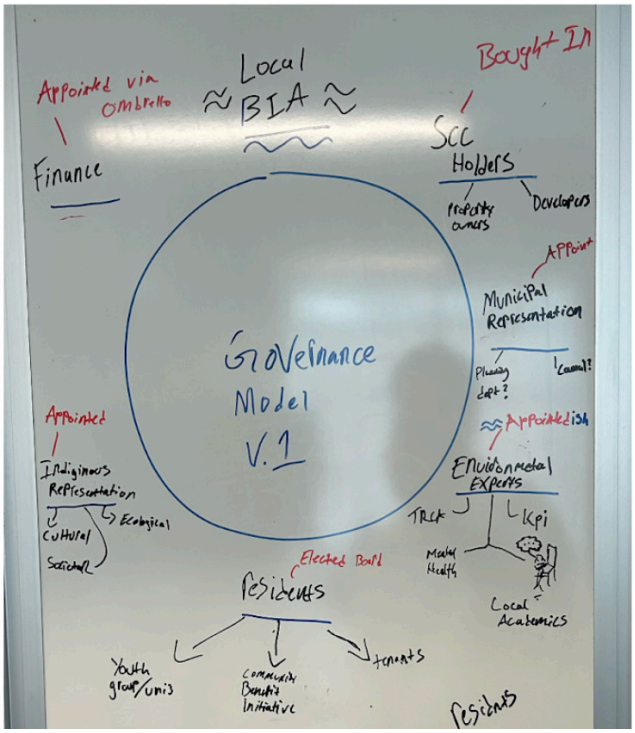
Title	Author/Publisher	Publication	Link to Source	Scoping Typology
2026 Budget Notes Parks and Recreation	BudgetTO	2026	https://www.toronto.ca/legdocs/mmis/2026/bu/bgrd/backgroundfile-261733.pdf	Criteria for a park
Parkland Strategy	City of Toronto	2019	https://www.toronto.ca/wp-content/uploads/2019/11/97fb-parkland-strategy-full-report-final.pdf	Criteria for a park Criteria for an ecological asset
Lichen conservation in North America: a review of current practices and research in Canada and the United States.	Allen, J. L., McMullin, R. T., Tripp, E. A., & Lendemer, J. C	2019	https://doi.org/10.1007/s10531-019-01827-3	Criteria for an ecological asset Landscape connectivity
New scholarly pathways on green gentrification: What does the urban 'green turn' mean and where is it going?	Anguelovski, I., Connolly, J. J., Garcia-Lamarca, M., Cole, H., & Pearsall, H	2019	https://doi.org/10.1177/0309132518803799	Community engagement
The High Line's 'Halo Effect' on Property: Residential values along the park appreciate faster than those farther away.	Barbanel, J.	2016	https://www.wsj.com/articles/the-high-lines-halo-effect-on-property-1470608556	Ecosystem services Criteria for a park
Urban tree canopy cover over 30 % and native trees enhance bird insectivory and tree biosecurity.	Basile, M., Augustinus, B. A., & Brockerhoff, E. G	2025	https://doi.org/10.1016/j.biocon.2025.111387	Criteria for an ecological asset Climate adaptivity Landscape connectivity
A forest runs through it: Atlanta, Georgia's BeltLine Arboretum	Beatley, T	2020	https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5eff40e7f659370409a10df7/1593786603510/BeltLine+Arboretum.pdf	Criteria for a park Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Doug Tallamy's urgent call for native plants and trees	Beatley, T	2020	https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5eff4084894f6b087da50048/1593786509266/Tallamy.pdf	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Safe passages: highways, wildlife, and habitat connectivity	Beckmann, J. P., A. P. Clevenger, M. P. Huijser, and J. A. Hilty, editors	2010	http://ezproxy.lib.torontomu.ca/login?url=http://site.ebrary.com/lib/torontomu/docDetail.action?docID=10437881	Landscape connectivity Criteria for an ecological asset
The Network Dynamics Hypothesis: How Channel Networks Structure Riverine Habitats.	BENDA, L., POFF, N. L., MILLER, D., DUNNE, T., REEVES, G., PESS, G., & POLLOCK, M.	2004	https://doi.org/10.1641/0006-3568(2004)054[0413:TNDHHC]2.0.CO;2	Landscape connectivity Criteria for an ecological asset Ecosystem services Climate adaptivity
Loss of Plant Species Diversity Reduces Soil Erosion Resistance	Berendse, F., van Ruijven, J., Jongejans, E., & Keesstra, S	2015	https://doi.org/10.1007/s10021-015-9869-6	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Larger patches of diverse floral resources increase insect pollinator density, diversity, and their pollination of native wildflowers.	Blaauw, B. R., & Isaacs, R	2014	https://doi.org/10.1016/j.baae.2014.10.001	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
How funding scarcity and ineffective governance tools inhibit urban greenspace provision: An exploration of municipal greenspace managers' insights	Boulton, C., & Dedekorkut-Howes	2024	https://doi.org/10.1016/j.landurbplan.2024.105172	Criteria for a park Community engagement
The Heart of Warsaw — The Vistula River	Brodowicz, D. P.	2019	https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5ca124e0419202a10bf1ab25/1554064609550/Vistula+River.pdf	Criteria for a park Ecosystem services Landscape connectivity
Dale Hodges Park. Canadian Society of Landscape Architects.	Careri, S	n.d.	https://www.csla-aapc.ca/mission-areas/dale-hodges-park	Criteria for a park Landscape connectivity Ecosystem services Climate adaptivity
Play Sculptures: Public Art in the Playground.	Cartiere, C.	2022	https://doi.org/10.1080/21502552.2021.1993619	Criteria for a park Community engagement
Handbook on the Singapore Index on Cities' Biodiversity (CBD Technical Series No. 98). Secretariat of the Convention on Biological Diversity and National Parks Board, Singapore.	Chan, L., Hillel, O., Werner, P., Holman, N., Coetzee, I., Galt, R., & Elmqvist, T.	2021	https://www.cbd.int/doc/publications/cbd-ts-98-en.pdf	Criteria for a park Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity Community engagement
Australia's carbon sequestration potential	Commonwealth Scientific and Industrial Research Organisation	2024	https://www.csiro.au/en/research/environmental-impacts/emissions/carbon-dioxide-removal/carbon-sequestration-potential	Climate adaptivity Ecosystem services
Habitat connectivity in biodiversity conservation: A review of recent studies and applications	Correa Ayram, C. A., Mendoza, M. E., Etter, A., & Salicrup, D. R. P.	2016	https://doi.org/10.1177/0309133315598713	Landscape connectivity Criteria for an ecological asset Climate adaptivity
A smart commons: A new model for investing in the commons	Dark Matter Labs	2019	https://provocations.darkmatterlabs.org/a-smart-commons-528f4e53cec2	Trusts/funds Criteria for a park Landscape connectivity
he Toronto Ravines Study: 1977-2017: Long-term changes in the biodiversity and ecological integrity of Toronto's ravines.	Davies, E., Dong, A., Berka, C., Scrivener, P., Taylor, D., & Smith, S. M.	2018	https://torontoravinesdotorg.wordpress.com/wp-content/uploads/2018/09/toronto-ravines-study-1977-to-2017-short.pdf	Ecosystem services Criteria for an ecological asset
The Relationship Between Trees and Human Health	Donovan, G. H., Butry, D. T., Michael, Y. L., Prestemon, J. P., Liebhold, A. M., Gatziolis, D., & Mao, M. Y.	2013	https://doi.org/10.1016/j.amepre.2012.09.066	Criteria for an ecological asset Ecosystem services
Multitasking street trees.	Dümpelmann, S	2020	https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5eff3fd4e7b8e202d6f8a26d/1593786330913/Dumpelmann.pdf	Criteria for an ecological asset Ecosystem services Climate adaptivity
Ecosystem services provided by small streams: an overview	Ferreira, V., Albariño, R., Larrañaga, A., LeRoy, C. J., Masese, F. O., & Moretti, M. S	2023	https://doi.org/10.1007/s10750-022-05095-1	Ecosystem services Landscape connectivity Criteria for an ecological asset

Psychological benefits of greenspace increase with biodiversity	Fuller, R. A., Irvine, K. N., Devine-Wright, P., Warren, P. H., & Gaston, K. J	2007	https://doi.org/10.1098/rsbl.2007.0149	Ecosystem services Criteria for an ecological asset
Urban forest biodiversity and cardiovascular disease: Potential health benefits from California's street trees.	Giacinto, J. J., Fricker, G. A., Ritter, M., Yost, J., & Doremus, J.	2021	https://doi.org/10.1371/journal.pone.0254973	Criteria for an ecological asset Landscape connectivity Ecosystem services
The importance of artificial wetlands for birds: A case study from Cyprus.	Giosa, E., Mammides, C., & Zotos, S.	2018	https://doi.org/10.1371/journal.pone.0197286	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Enhancing Stream Ecosystems Through Riparian Vegetation Management.	Gu, J.-Y., Lee, J.-W., Lee, S.-W., Park, Y., & Park, S.-R	2015	https://doi.org/10.3390/land14061248	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Guidelines for conserving connectivity through ecological networks and corridors.	Hilty, J., Worboys, G. L., Keeley, A., Woodley, S., Lausche, B. J., Locke, H., Carr, M., Pulsford, I., Pittock, J., White, J. W., Theobald, D. M., Levine, J., Reuling, M., Watson, J. E. M., Ament, R., & Tabor, G. M.	2020	https://doi.org/10.2305/iucn.ch.2020.pag.30.en	Criteria for an ecological asset Criteria for a park Landscape connectivity Ecosystem services
Grasslands of cleared woodlands have lower invertebrate diversity and different assemblages to remnant woodlands in grazed landscapes of eastern Australia.	Houston, W. A., Black, R. L., & Wormington, K. R.	2023	https://doi.org/10.1007/s10841-023-00515-6	Criteria for an ecological asset Ecosystem services
Nature-based solutions in the post-2020 global biodiversity framework targets: NbS for the biodiversity and climate crises.	International Union for Conservation of Nature	2022	https://iucn.org/sites/default/files/2022-11/nbs-in-gbf-targets-brief-november-2022.pdf	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
IUCN urban toolbox.	International Union for Conservation of Nature	2023	https://iucn.org/sites/default/files/2023-11/iucn-urban-toolbox_en.pdf	Criteria for an ecological asset Landscape connectivity Ecosystem services
Detecting the role of urban green parks in thermal comfort and public health for sustainable urban planning in Delhi.	Jha, P., Joy, M. S., Yadav, P. K., Begam, S., & Bansal, T.	2024	https://doi.org/10.1186/s12982-024-00368-7	Criteria for a park Criteria for an ecological asset Climate adaptivity
Pond ecology and conservation: research priorities and knowledge gaps	[illegible] M., Milner, V. S., Marazzi, L., Hall, R., Harper, L. R., Thornhill, I., Walton, R., Biggs, J., Ewald, N., Law, A., Willby, N., White, J. C., Briers, R. A., Mathers, K. L., Jeffries, M. J., & Wood, P. J.	2021	https://doi.org/10.1002/ecs2.3853	Criteria for an ecological asset Landscape connectivity Ecosystem services
Nature Park Amager – examining the transition from urban wasteland to a rewilded ecotourism destination.	Kaae, B. C., Holm, J., Caspersen, O. H., & Gulsrud, N. M.	2019	https://doi.org/10.1080/14724049.2019.1601729	Criteria for a park Community engagement
Evaluation of national historic site visitor experience	Government of Canada.	2020	https://parks.canada.ca/agence-agency/bib-lib/rapports-reports/evaluation/examens-reviews/2019-2020/visiteur-lhn-visitor-nhs	Community engagement
Renaturalization and Rewilding as Strategies to Strengthen Urban Resilience	Growing Biodiverse Urban Futures	2021	https://doi.org/10.3390/su13052932	Criteria for an ecological asset
Beyond the lawn: Bylaws for biodiversity—Evidence-based recommendations for future practice and policy development	Lister, N.-M., & Careri, S.	2025	https://digitalcommons.lmu.edu/cgi/viewcontent.cgi?article=1390&context=cate	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Growing Biodiverse Urban Futures: Renaturalization and Rewilding as Strategies to Strengthen Urban Resilience	Lehmann, S	2021	https://doi.org/10.3390/su13052932	Ecosystem services Climate adaptivity
Creating Effective Urban Greenways and Stepping-stones: Four Critical Gaps in Habitat Connectivity Planning Research.	Lynch, A. J.	2019	https://doi.org/10.1177/0885412218798334	Criteria for an ecological asset Landscape connectivity Climate adaptivity
Defining wilderness: The evolution of Banff National Park.	Mayer, F., Bernbaum, P., Neuhaus, F., & Robertson, N.	2023	https://doi.org/10.14324/111.444.amps.2023v26i1.003	Criteria for a park Climate adaptivity
A need for trees: How Central Park cools the (urban heat) island of Manhattan.	McMenamin, S.	2021	https://www.centralparknyc.org/articles/how-central-park-cools-the-heat-island	Criteria for a park Climate adaptivity Ecosystem services
Biodiversity Congruence Across Lake-Watershed Landscapes: Insights From an Analysis of 615 Canadian Sites	Mirza, S., Gregory-Eaves, I., & Huot, Y	2025	https://doi.org/10.1111/ddi.13953	Criteria for an ecological asset Ecosystem services Landscape connectivity
What are municipal natural assets: Defining and scoping municipal natural assets.	Municipal Natural Assets Initiative.	2019	https://naturalassetsinitiative.ca/wp-content/uploads/2025/02/SP_MNAI_Report-1-_June2019-2.pdf	Criteria for an ecological asset
Capitalized value of evolving flood risks discount and nature-based solution premiums on property prices.	Mutlu, A., Roy, D., & Filatova, T.	2023	https://doi.org/10.1016/j.ecolecon.2022.107682	Criteria for an ecological asset Ecosystem services Climate adaptivity
Greening practitioners worry about green gentrification but many don't address it in their work.	Nesbitt, L., Sax, D. L., Quinton, J., Harris, L. M., Camilo Ordóñez Barona, & Konijnendijk, C.	2023	https://doi.org/10.5751/ES-14579-280429	Criteria for a park Community engagement
Stakeholder engagement for inclusive water governance	OECD	2015	https://doi.org/10.1787/9789264231122-en	Community engagement Climate adaptivity
Park Proximity and Use for Physical Activity among Urban Residents: Associations with Mental Health.	Orstad, S. L., Szuhany, K., Tamura, K., Thorpe, L. E., & Jay, M.	2020	https://doi.org/10.3390/ijerph17134885	Ecosystem services
Urban greenspace access, uses, and values: A case study of user perceptions in metropolitan ravine parks.	Oviedo, M., Drescher, M., & Dean, J.	2022	https://doi.org/10.1016/j.ufug.2022.127522	Landscape connectivity Ecosystem services Criteria for a park Community engagement
The seven lamps of planning for biodiversity in the city	Parris, K. M., Amati, M., Bekessy, S. A., Dagenais, D., Fryd, O., Hahs, A. K., Hes, D., Imberger, S. J., Livesley, S. J., Marshall, A. J., Rhodes, J. R., Threlfall, C. G., Tingley, R., van der Ree, R., Walsh, C. J., Wilkerson, M. L., & Williams, N. S. G.	2018	https://doi.org/10.1016/j.cities.2018.06.007	Criteria for an ecological asset Ecosystem services Climate adaptivity
Costs and benefits of urban erosion and sediment control: the North Carolina experience.	Paterson, R. G., Luger, M. I., Burby, R. J., Kaiser, E. J., Malcom, H. R., & Beard, A. C.	1993	https://doi.org/10.1007/BF02394687	Criteria for an ecological asset Ecosystem services
Allan Gardens, Toronto: Protest and public space. SP: The Bullet	Palmer, B	2025	https://socialistproject.ca/2025/10/allan-gardens-toronto-protest-and-public-space/	Criteria for a park Community engagement
Urban greening with biodiverse perennial meadows improves ecosystem services in human dominated landscapes.	Paudel, S., States, S. L., & Mainali, K.	2025	https://doi.org/10.1016/j.ufug.2025.129014	Criteria for an ecological asset Landscape connectivity Ecosystem services Climate adaptivity
Adults' motivation for bringing their children to park playgrounds.	Refshauge, A. D., Stigsdotter, U. K., & Cosco, N. G.	2012	https://doi.org/10.1016/j.ufug.2012.06.002	Criteria for a park Community engagement
Shanghai Houtan Park.	Rottle, N., Lacson, D., Cromwell, P., Yeh, Y.-J., & Hai, C.	2011	https://doi.org/10.31353/cs0170	Criteria for a park Ecosystem services Climate adaptivity
Integrating physical and social variables to enhance understanding of urban forestry key-indicators: Insights from a socio-cultural forest monitoring.	Salak, B., Trummer, J., Hegetschweiler, K. T., Fraefel, M., Wunderlich, A. C., Bauer, N., Troll, H., & Hunziker, M	2026	https://doi.org/10.1016/j.ufug.2026.129311	Ecosystem services Community engagement
Valuing Ecosystem Services.	Salzman, J	1997	http://www.jstor.org/stable/24113302	Ecosystem services Community engagement

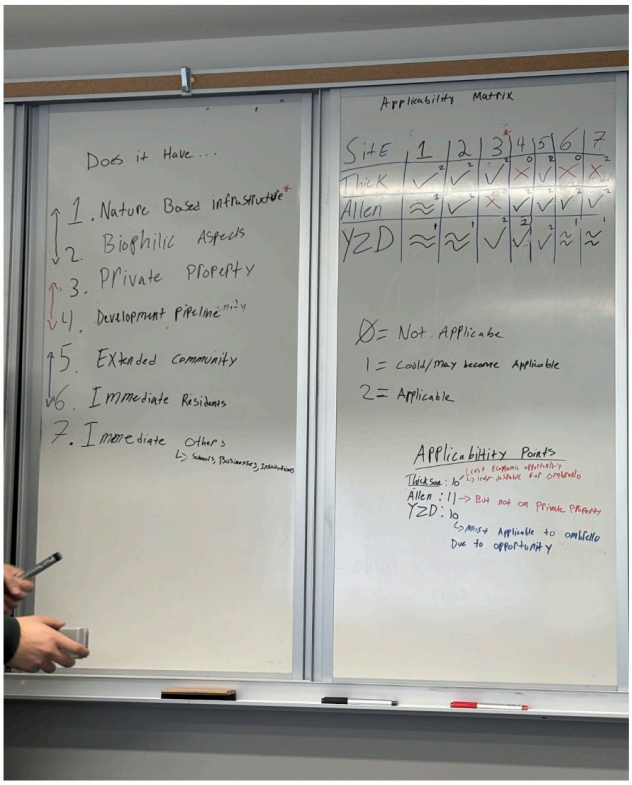
Reimagining infrastructure for a biodiverse future.	van Rees, C. B., Hernández-Abrams, D. D., Shudtz, M., Lammers, R., Byers, J., Bledsoe, B. P., Bilskie, M. V., Calabria, J., Chambers, M., Dolatowski, E., Ferreira, S., Naslund, L., Nelson, D. R., Nibbelink, N., Suedel, B., Tritinger, A., Woodson, C. B., McKay, S. K., & Wenger, S. J.	n.d.	https://doi.org/10.1073/pnas.2214334120	Criteria for an ecological asset, Landscape connectivity, Ecosystem services, Climate adaptivity
Biodiversity matters in feedbacks between climate change and air quality: a study using an individual-based model.	Wang, B., Shuman, J., Shugart, H. H., & Lerdau, M. T.	2018	https://doi.org/10.1002/eap.1721	Climate adaptivity
Don mouth naturalization and Port Lands flood protection.	Waterfront Toronto	n.d.	https://www.waterfrontoronto.ca/our-projects/don-mouth-naturalization-and-port-lands-flood-protectio	Criteria for a park, Criteria for an ecological asset, Landscape connectivity, Ecosystem services, Climate adaptivity
Spending at least 120 minutes a week in nature is associated with good health and wellbeing.	White, M. P., Alcock, I., Grellier, J., Wheeler, B. W., Hartig, T., Warber, S. L., Bone, A., Depledge, M. H., & Fleming, L. E	2019	https://doi.org/10.1038/s41598-019-44097-3	Ecosystem services
Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough.	Wolch, J. R., Byrne, J., & Newell, J. P.	2014	https://doi.org/10.1016/j.landurbplan.2014.01.017	Criteria for an ecological asset, Community engagement
"Biophilia and the Conservation Ethic," in The Biophilia Hypothesis.	Wilson, E. O.	1993	N/A	Ecosystem services, Community engagement
Moss Cover Modulates Soil Fungal Functional Communities and Nutrient Cycling in Alpine Forests.	Wei, M., Sun, Q., & Liu, D.	2025	https://doi.org/10.3390/f16010138	Criteria for an ecological asset
Revealing Public Perceptions of Biodiverse vs. Turf Swales: Balancing Enhanced Ecosystem Services with Heightened Concerns	Wu, H., Hoffman, M. C., Wang, R., Kelley, K. M., & Adib, M.	2024	https://doi.org/10.3390/w16202899	Criteria for an ecological asset, Community engagement
Participatory Budgeting	The High Line	n.d.	https://www.thehighline.org/participatory-budgeting/	Community engagement
Neighbors Council	The High Line	n.d.	https://www.thehighline.org/neighbors-council/	Community engagement
Using Conservancies to Build Great Public Spaces	Build Toronto	n.d.	https://buildtoronto.com/memos/conservancies	Conservancies
Does Governance Influence Community Support in Conservation and Ecological Sustainability of Wildlife Conservancies?	Molu, W., Mulwa, R., & Mohamud, J.	2025	https://doi.org/10.3390/su17167181	Conservancies
Public Spaces, Private Money: The Triumphs and Pitfalls of Urban Park Conservancies	Harnik, Peter; Martin, Abby	2015	https://www.communityforthecommons.org/uploads/1/2/9/9/129938953/public-spaces-private-money-feb-2015.pdf	Conservancies, Trusts/funds/foundations
Breaking the Cycle of Marginalization: How to Involve Local Communities in Multi-stakeholder Initiatives?	Eikelenboom, M., & Long, T. B	2023	https://doi.org/10.1007/s10551-022-05252-5.	Community engagement
Governing national parks in Finland: the illusion of public involvement, Local Environmen	Sam Grönholm	2003	DOI: 10.1080/13549830802692955.	Community engagement
About Us	Bruce Trail Conservancy	n.d.	https://brucetrail.org/about-us/	Conservancies, Advisory committees/voting boards
Board Information for Potential Members	Ducks Unlimited Canada	2018	https://www.ducks.ca/assets/2018/04/Board-Info-for-Potential-Members.pdf	Trusts/funds/foundations, Advisory committees/voting boards
Your Board of Directors for Huron Tract Land Trust Conservancy	Huron Tract Land Trust Conservancy	2025	https://htltc.ca/board/	Trusts/funds/foundations, Advisory committees/voting boards
Structure of the IPCC	Intergovernmental Panel on Climate Change	n.d.	https://www.ipcc.ch/about/structure/	Advisory committees/voting boards
Our Trustees	John Muir Trust	n.d.	https://www.johnmuirtrust.org/about-us/our-trustees	Trusts/funds/foundations, Advisory committees/voting boards
TRCA GOVERNANCE	Toronto and Region Conservation Authority	n.d.	https://trca.ca/about/governance/	Conservancies, Advisory committees/voting boards
Transforming Biodiversity Governance.	Visseren-Hamakers, I. J., & Kok, M. T. J.	2022	https://doi.org/10.1017/9781108856348	Conservancies, Community engagement, Climate adaptivity, Ecosystem services
Scaling the community-based CLT: A case study of The Neighbourhood Land Trust	Wandio, C., & Barndt, J	2024	https://pnlt.ca/cms/custom/uploads/2025/02/Scaling-the-Community-Based-CLT_A-Case-Study-of-The-Neighbourhood-Land-Trust_2024-1.pdf	Trusts/funds/foundations, Community engagement
About the Assiniboine Park Conservancy.	Assiniboine Park Conservancy	n.d.	https://www.assiniboinepark.ca/about	Conservancies, Community engagement
Cultus Lake Park Governance.	Cultus Lake Park	n.d.	https://www.cultuslake.bc.ca/cultus-lake-park-governance/	Advisory committees/voting boards
Structure of the Funds.	Coast Funds	n.d.	https://www.csiro.au/en/research/environmental-impacts/emissions/carbon-dioxide-removal/carbon-sequestration-potential	Trusts/funds/foundations, Advisory committees/voting boards
Who we are	FUNBIO	2017	https://www.funbio.org.br/en/who-we-are/	Climate adaptivity, Ecosystem services, Trusts/funds/foundations, Fiduciaries
About us	Bhutan For Life	n.d.	https://bfl.org.bt/about-us/	Climate adaptivity, Conservancies
About the Royal Parks charity.	The Royal Parks	2025	https://www.royalparks.org.uk/about-us/royal-parks-charity	Charities
Protection de l'environnement.	Fondation Terre Solidaire	n.d.	https://fondation-terresolidaire.org/	Trusts/funds/foundations
About	National Heritage Memorial Fund	n.d.	https://www.memorialfund.org.uk	Trusts/funds/foundations
About us.	German Federal Environmental Foundation	n.d.	https://www.dbu.de/en/about-us/german-federal-environmental-foundation/	Trusts/funds/foundations
Champlain Housing Trust: Affordable housing through community land ownership.	Yoo	2024	https://progressandpovertyinstitute.org/champlain-housing-trust-affordable-housing-through-community-land-ownership/	Trusts/funds/foundations
About us.	Dudley Street Neighborhood Initiative	n.d.	https://www.dsni.org/about-us	Community engagement, Advisory committees/voting boards

Fiducie d'utilité sociale	TIESS	n.d.	https://tiess.ca/projets/fiducie-dutilite-sociale	Fiduciaries
About the Friends of Allan Gardens	Friends of Allan Gardens	n.d.	https://www.friendsofallangardens.ca/about	Community engagement Advisory committees/voting boards

APPENDIX B: Workshopping



Governance Board Model



Applicability Matrix

REFERENCES

Aino. (n.d.). *Isolated American robin close-up: A charming bird portrait against a simple background* [Photograph]. Adobe Stock. https://stock.adobe.com/images/isolated-american-robin-close-up-a-charming-bird-portrait-against-a-simple-background/1847612490

Allen, J. L., McMullin, R. T., Tripp, E. A., & Lendemer, J. C. (2019). Lichen conservation in North America: a review of current practices and research in Canada and the United States. *Biodiversity and Conservation*, *28*(12), 3103–3138. https://doi.org/10.1007/s10531-019-01827-3

Anela R. (n.d.). *Health, exercise and black couple running in nature* [Photograph]. Adobe Stock. https://stock.adobe.com/images/health-exercise-and-black-couple-running-nature-and-workout-goal-with-endurance-training-and-wellness-runners-man-and-woman-in-the-street-run-and-progress-with-health-performance-and-fitness/607692273

Anguelovski, I., Connolly, J. J., Garcia-Lamarca, M., Cole, H., & Pearsall, H. (2019). New scholarly pathways on green gentrification: What does the urban 'green turn' mean and where is it going? *Progress in Human Geography*, *43*(6), 1064–1086. https://doi.org/10.1177/0309132518803799

Aksich, C. (2026, February 3). *There's a petition to double the space at Allan Gardens' conservatory.* Toronto Life. https://torontolife.com/city/allan-gardens-petition/]

Arroyo, P. (2024). *Project finance for permanence: A global conservation model.* https://enduringearth.org/9-components-of-a-pfp/

Assiniboine Park Conservancy. (n.d.). *About the Assiniboine Park Conservancy.* https://www.assiniboinepark.ca/about

Avtk. (n.d.). *Chulalongkorn University Centenary Park in Bangkok, Thailand* [Photograph]. Adobe Stock. https://stock.adobe.com/images/chulalongkorn-university-centenary-park-in-bangkok-thailand/669874149

Baisch, B. (n.d.). *An Eastern garter snake searches for a meal in Glen Stewart Ravine, Toronto, Ontario* [Photograph]. Adobe Stock. https://stock.adobe.com/images/an-eastern-garter-snake-searches-for-a-meal-in-the-glen-stewart-ravine-in-the-upper-beaches-neighbourhood-of-toronto-ontario/353406329

Baranq. (n.d.). *Man running in park at autumn morning* [Photograph]. Adobe Stock. https://stock.adobe.com/images/man-running-in-park-at-autumn-morning/95988813

Barbanel, J. (2016). The High Line's 'Halo Effect' on Property: Residential values along the park appreciate faster than those farther away. *Wall Street Journal*, Aug. 7.
https://www.wsj.com/articles/the-high-lines-halo-effect-on-property-1470608556

Basile, M., Augustinus, B. A., & Brockerhoff, E. G. (2025). Urban tree canopy cover over 30 % and native trees enhance bird insectivory and tree biosecurity. *Biological Conservation*, *310*, Article 111387. https://doi.org/10.1016/j.biocon.2025.111387

Beacon Endowment Solutions. (2024, October 7). *Importance of Governance in Endowment Management. Beacon Endowment Solutions.* https://beaconendowmentsolutions.ca/importance-of-governance-in-endowment-management/

Beatley, T. (2020a). A forest runs through it: Atlanta, Georgia's BeltLine Arboretum. *Biophilic Cities Journal.* https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5eff40e7f659370409a10df7/1593786603510/BeltLine+Arboretum.pdf

Beatley, T. (2020b). Doug Tallamy's urgent call for native plants and trees. *Biophilic Cities Journal.* https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5eff4084894f6b087da50048/1593786509266/Tallamy.pdf

Beckmann, J. P., A. P. Clevenger, M. P. Huijser, and J. A. Hilty, editors. (Ed.). (2010). *Safe passages: highways, wildlife, and habitat connectivity*. Island Press http://ezproxy.lib.torontomu.ca/login?url=http://site.ebrary.com/lib/torontomu/docDetail.action?docID=10437881

Benda, L., Poff, N. L., Miller, D., Dunne, T., Reeves, G., Pess, G., & Pollock, M. (2004). The Network Dynamics Hypothesis: How Channel Networks Structure Riverine Habitats. *Bioscience*, *54*(5), 413–427. https://doi.org/10.1641/0006-3568(2004)054[0413:TNDHHC]2.0.CO;2

Berendse, F., van Ruijven, J., Jongejans, E., & Keesstra, S. (2015). Loss of Plant Species Diversity Reduces Soil Erosion Resistance. *Ecosystems (New York)*, *18*(5), 881–888. https://doi.org/10.1007/s10021-015-9869-6

Bhutan for Life. (n.d.). *About us.* https://bfl.org.bt/about-us/

Bianchi, C., Nasi, G., & Rivenbark, W. C. (2021). Implementing collaborative governance: Models, experiences, and challenges. *Public Management Review, 23*(11), 1581–1589. https://doi.org/10.1080/14719037.2021.1878777

Blaauw, B. R., & Isaacs, R. (2014). Larger patches of diverse floral resources increase insect pollinator density, diversity, and their pollination of native wildflowers. *Basic and Applied Ecology*, *15*(8), 701–711. https://doi.org/10.1016/j.baae.2014.10.001

Bogacki, A. (n.d.). *Berlin skyline above Tiergarten Park in Germany* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/berlin-skyline-above-tiergarten-park-in-germany/502155445

Boulton, C., & Dedekorkut-Howes, A. (2024). How funding scarcity and ineffective governance tools inhibit urban greenspace provision: An exploration of municipal greenspace managers' insights. *Landscape and Urban Planning*, *251*, Article 105172. https://doi.org/10.1016/j.landurbplan.2024.105172

Brodowicz, D. P. (2019). The Heart of Warsaw — The Vistula River. *Biophilic Cities Journal*. https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5ca124e0419202a10bf1ab25/1554064609550/Vistula+River.pdf

Bratslavsky, N. (n.d.). *Close-up of curious red fox on Prince Edward Island National Park coastline, Canada* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/close-up-of-curious-red-fox-on-prince-edward-island-national-park-coastline-canada/1925501722

Bruce Trail Conservancy. (n.d.). *About us.* https://brucetrail.org/about-us/

Bruni-Bossio, V., & Kaczur, M. (2022). The power-structure model of non-profit governance. Corporate Governance: An International Review, 30(4), 442–460. https://doi.org/10.1111/corg.12417

Building Bridges Across the River. (n.d.). *11th Street Bridge Park's community preservation plan.* https://buildingbridgesdc.org/wp-content/uploads/2025/03/11th-Street-Bridge-Park-Community-Preservation-Plan.pdf

Cambridge Associates. (2016, May 25). *The Foundation of Good Governance for Endowments and Investment Committees.* https://www.cambridgeassociates.com/insight/good-governance/

Careri, S. (n.d.). Dale Hodges Park. *Canadian Society of Landscape Architects.* https://www.csla-aapc.ca/mission-areas/dale-hodges-park

Cartiere, C. (2022). Play Sculptures: Public Art in the Playground. *Public Art Dialogue, 12(1), 5–23.* https://doi.org/10.1080/21502552.2021.1993619

Chan, L., Hillel, O., Werner, P., Holman, N., Coetzee, I., Galt, R., & Elmqvist, T. (2021). *Handbook on the Singapore Index on Cities' Biodiversity (CBD Technical Series No. 98)*. Secretariat of the Convention on Biological Diversity and National Parks Board, Singapore. https://www.cbd.int/doc/publications/cbd-ts-98-en.pdf

Cheț an, V. (n.d.). *Macro shot of a bee on a pink flower isolated on a blurred background* [Photograph]. Adobe Stock. https://stock.adobe.com/images/macro-shot-of-a-cute-bee-on-a-pink-flower-isolated-on-a-blurred-background/593236425

City of Toronto. (n.d.a). *Business improvement areas (BIAs).*

City of Toronto. (n.d.b). *Coronation Park* [Photograph]. City of Toronto. https://www.toronto.ca/explore-enjoy/parks-recreation/places-spaces/parks-and-recreation-facilities/location/?id=2031&title=Coronation-Park---York
City of Toronto. (2022). *Parkland strategy: 2022 refresh (draft)*. https://www.toronto.ca/wp-content/uploads/2022/04/969f-Parkland-Strategy-Draft-April-2022-Refresh.pdf
City of Toronto. (2026). *2026 budget notes: Parks and recreation.* https://www.toronto.ca/legdocs/mmis/2026/bu/bgrd/backgroundfile-261733.pdf
City of Toronto. (2025a). *Indigenous Community Resource Group (ICRG): Terms of reference.* https://www.toronto.ca/legdocs/mmis/2025/aa/bgrd/backgroundfile-258368.pdf
City of Toronto. (2019). *Toronto parkland strategy.* https://www.toronto.ca/wp-content/uploads/2019/11/97fb-parkland-strategy-full-report-final.pdf
City of Toronto. (2025b). *Update Downsview Aboriginal Affairs Advisory Committee.* https://www.toronto.ca/legdocs/mmis/2025/aa/bgrd/backgroundfile-258135.pdf
Cliff, R. (n.d.). *Dale Hodges Park and storm retention ponds during fall colours in Calgary, Alberta, Canada* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/dale-hodges-park-and-storm-retention-ponds-during-fall-colours-in-calgary-alberta-canada/460537301
Coast Funds. (n.d.).*Structure of the Funds*. https://coastfunds.ca/about/structure-of-the-funds/
Commonwealth Scientific and Industrial Research Organisation. (2024, August 12). *Australia's carbon sequestration potential*. CSIRO. https://www.csiro.au/en/research/environmental-impacts/emissions/carbon-dioxide-removal/carbon-sequestration-potential
Community Foundations of Canada. (2016). *Key policy template manual.* https://communityfoundations.ca/wp-content/uploads/2019/04/Key-Policy-Template-Manual-2016-Final.pdf
Conservatory Heritage Society. (n.d.). *The Palm House Conservatory at Allan Gardens.* https://www.conservatoryheritage.org/historic-conservatories-library/20-century/the-palm-house-conservatory-at-allan-gardens
Correa Ayram, C. A., Mendoza, M. E., Etter, A., & Salicrup, D. R. P. (2016). Habitat connectivity in biodiversity conservation: A review of recent studies and applications. *Progress in Physical Geography*, *40*(1), 7–37. https://doi.org/10.1177/0309133315598713]
Crompton, J. L. (2001). The Impact of Parks on Property Values: A Review of the Empirical Evidence. *Journal of Leisure Research*, *33*(1), 1–31. https://doi.org/10.1080/00222216.2001.11949928.
Costanza, R., d'Arge, R., de Groot, R., Farber, S., Grasso, M., Hannon, B., Limburg, K., Naeem, S., O'Neill, R. V., Paruelo, J., Raskin, R. G., Sutton, P., & van den Belt, M. (1998). The value of ecosystem services: putting the issues in perspective. *Ecological Economics, 25*(1), 67–72. https://doi.org/10.1016/S0921-8009(98)00019-6.
Cultus Lake Park. (n.d.). *Cultus Lake Park Governance.* https://www.cultuslake.bc.ca/cultus-lake-park-governance/
Cultus Lake Park Board. (2019). *Strategic plan 2018-2022.* https://www.cultuslake.bc.ca/wp-content/uploads/2021/03/CultusLakeStrategicPlan-2019.pdf
Daria. (n.d.). *Autumn set photo overlays: falling leaves, fog, rain, sun, light, Photoshop frame* [Photograph]. Adobe Stock. https://stock.adobe.com/images/autumn-set-photo-overlays-falling-leaves-fog-rain-sun-light-photoshop-frame-png/505877134
Dark Matter Labs. (2019, September 13). *A smart commons: A new model for investing in the commons.* Medium. https://provocations.darkmatterlabs.org/a-smart-commons-528f4e53cec2
Davies, E., Dong, A., Berka, C., Scrivener, P., Taylor, D., & Smith, S. M. (2018). *The Toronto Ravines Study: 1977-2017: Long-term changes in the biodiversity and ecological integrity of Toronto's ravines*. Faculty of Forestry, University of Toronto. https://torontoravinesdotorg.wordpress.com/wp-content/uploads/2018/09/toronto-ravines-study-1977-to-2017-short.pdf

Deyan. (2018). *Hands in Berczy Park, small park in downtown Toronto* [Photograph]. Adobe Stock. https://stock.adobe.com/images/toronto-canada-october-10-2018-hands-in-berczy-park-small-park-in-downtown-toronto/231976566

del Barrio, E. (n.d.). *Two excavators removing stone in road construction works* [Photograph]. Adobe Stock. https://stock.adobe.com/images/two-excavators-removing-stone-in-the-construction-works-of-a-road/246767744

Designpics. (n.d.). *Happy black family doing sport practice in city park: Father teaching son football* [Photograph]. Adobe Stock. https://stock.adobe.com/images/happy-black-people-doing-sport-practice-in-city-park-african-american-family-with-father-teaching-son-how-to-play-football/617505772

DisobeyArt. (n.d.). *Group of multigenerational people hugging each other* [Photograph]. Adobe Stock. https://stock.adobe.com/images/group-of-multigenerational-people-hugging-each-others-support-multiracial-and-diversity-concept-main-focus-on-senior-man-with-white-hairs/580276581

Donovan, G. H., Butry, D. T., Michael, Y. L., Prestemon, J. P., Liebhold, A. M., Gatziolis, D., & Mao, M. Y. (2013). The Relationship Between Trees and Human Health. *American Journal of Preventive Medicine, 44*(2), 139–145. https://doi.org/10.1016/j.amepre.2012.09.066

Drazen. (n.d.). *Asian female entrepreneur using calculator while going through business reports in office* [Photograph]. Adobe Stock. https://stock.adobe.com/images/asian-female-entrepreneur-using-calculator-while-going-through-business-reports-in-office/552746872

drhfoto. (n.d.). *Wild meadow at Big Waters Nature Reserve* [Photograph]. Adobe Stock. https://stock.adobe.com/images/wild-meadow-at-big-waters-nature-reserve-big-waters-nature-reserve-located-in-south-east-northumberland-near-newcastle-is-a-large-subsidence-pond/213640695

Ducks Unlimited Canada. (2018). *Board information for potential members.* https://www.ducks.ca/assets/2018/04/Board-Info-for-Potential-Members.pdf

Ducks Unlimited Canada. (n.d.). *Leadership*. https://www.ducks.ca/about/leadership/

Dudley Street Neighborhood Initiative. (n.d.). *About us.* https://www.dsni.org/about-us

Dümpelmann, S. (2020). Multitasking street trees. *Biophilic Cities Journal.* https://static1.squarespace.com/static/5bbd32d6e66669016a6af7e2/t/5eff3fd4e7b8e202d6f8a26d/1593786330913/Dumpelmann.pdf

Eyquem, J. L, Church, B. Brooke, R and Molnar, M. (2022). *Getting Nature on the Balance Sheet: Recognizing the Financial Value of Natural Assets in a Changing Climate.* Intact Centre on Climate Adaptation, University of Waterloo. https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2022/10/UoW_ICCA_2022_10_Nature-on-the-Balance-Sheet.pdf.

Ferreira, V., Albariño, R., Larrañaga, A., LeRoy, C. J., Masese, F. O., & Moretti, M. S. (2023). Ecosystem services provided by small streams: an overview.*Hydrobiologia, 850*(12-13), 2501-2535. https://doi.org/10.1007/s10750-022-05095-1

Fondation Terre Solidaire. (n.d.). *Protection de l'environnement.* https://fondation-terresolidaire.org/

Franklin, J. B. (n.d.). *Atlanta BeltLine* [Photograph]. Condé Nast Traveler. https://www.cntraveler.com/activities/atlanta/atlanta-beltline

Friends of Allan Gardens. (n.d.). *About the Friends of Allan Gardens.* https://www.friendsofallangardens.ca/about

Frumkin, H., Vest, G., & Simmons, C. (2024). Revitalize Parks to Strengthen Democracy. Stanford Social Innovation Review. https://ssir.org/articles/entry/power-of-parks-democracy

Fuller, R. A., Irvine, K. N., Devine-Wright, P., Warren, P. H., & Gaston, K. J. (2007). Psychological benefits of greenspace increase with biodiversity. *Biology Letters, 3*(4), 390–394. https://doi.org/10.1098/rsbl.2007.0149

Future Generations Commissioner for Wales. (2015). *Well-being of Future Generations (Wales) Act 2015.* https://futuregenerations.wales/discover/about-future-generations-commissioner/future-generations-act-2015/

FUNBIO. (2017). *Who we are.* https://www.funbio.org.br/en/who-we-are/
German Federal Environmental Foundation. (n.d.). *About us.* https://www.dbu.de/en/about-us/german-federal-environmental-foundation/
Giacinto, J. J., Fricker, G. A., Ritter, M., Yost, J., & Doremus, J. (2021). Urban forest biodiversity and cardiovascular disease: Potential health benefits from California's street trees. *PLOS ONE, 16*(11), e0254973. https://doi.org/10.1371/journal.pone.0254973
Giosa, E., Mammides, C., & Zotos, S. (2018). The importance of artificial wetlands for birds: A case study from Cyprus. *PloS One*, *13*(5), e0197286. https://doi.org/10.1371/journal.pone.0197286
Google Earth. (n.d.). *Google Earth*. https://www.google.com/earth
Government of Canada. (2020). *Evaluation of national historic site visitor experience* (Catalogue No. R62-564/2020E-PDF; ISBN 978-0-660-33769-2) (Office of Internal Audit and Evaluation). Government of Canada. https://parks.canada.ca/agence-agency/bib-lib/rapports-reports/evaluation/examens-reviews/2019-2020/visiteur-lhn-visitor-nhs
Growing Biodiverse Urban Futures: Renaturalization and Rewilding as Strategies to Strengthen Urban Resilience. (2021). *Sustainability, 13(5)*, 2932. https://doi.org/10.3390/su13052932
Gu, J.-Y., Lee, J.-W., Lee, S.-W., Park, Y., & Park, S.-R. (2025). Enhancing Stream Ecosystems Through Riparian Vegetation Management. *Land (Basel)*, *14*(6), 1248. https://doi.org/10.3390/land14061248
Hill, M. J., Greaves, H. M., Sayer, C. D., Hassall, C., Milin, M., Milner, V. S., Marazzi, L., Hall, R., Harper, L. R., Thornhill, I., Walton, R., Biggs, J., Ewald, N., Law, A., Willby, N., White, J. C., Briers, R. A., Mathers, K. L., Jeffries, M. J., & Wood, P. J. (2021). Pond ecology and conservation: research priorities and knowledge gaps. *Ecosphere, 12*(12)https://doi.org/10.1002/ecs2.3853
Hilty, J., Worboys, G. L., Keeley, A., Woodley, S., Lausche, B. J., Locke, H., Carr, M., Pulsford, I., Pittock, J., White, J. W., Theobald, D. M., Levine, J., Reuling, M., Watson, J. E. M., Ament, R., & Tabor, G. M. (2020). *Guidelines for conserving connectivity through ecological networks and corridors.* IUCN. https://doi.org/10.2305/iucn.ch.2020.pag.30.en
Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social Relationships and Mortality Risk: A Meta-analytic Review: e1000316. *PLoS Medicine, 7*(7). https://doi.org/10.1371/journal.pmed.1000316
Houston, W. A., Black, R. L., & Wormington, K. R. (2023). Grasslands of cleared woodlands have lower invertebrate diversity and different assemblages to remnant woodlands in grazed landscapes of eastern Australia. *Journal of Insect Conservation*, *27*(6), 999–1011. https://doi.org/10.1007/s10841-023-00515-6
Huron Tract Land Trust Conservancy. (2025). *Governance.* https://htltc.ca/board/
Intergovernmental Panel on Climate Change. (n.d.a). *Structure.* https://www.ipcc.ch/about/structure/
Intergovernmental Panel on Climate Change. (n.d.b). *Terms of reference of the Executive Committee.*
International Union for Conservation of Nature. (2020). *IUCN Global Standard for Nature-based Solutions: a user-friendly framework for the verification, design and scaling up of NbS: first edition.* https://portals.iucn.org/library/node/49070.
International Union for Conservation of Nature. (2022). *Nature-based solutions in the post-2020 global biodiversity framework targets: NbS for the biodiversity and climate crises.* https://iucn.org/sites/default/files/2022-11/nbs-in-gbf-targets-brief-november-2022.pdf
International Union for Conservation of Nature. (2023). *IUCN urban toolbox.* https://iucn.org/sites/default/files/2023-11/iucn-urban-toolbox_en.pdf
Jha, P., Joy, M. S., Yadav, P. K., Begam, S., & Bansal, T. (2024). Detecting the role of urban green parks in thermal comfort and public health for sustainable urban planning in Delhi. *Discover Public Health, 21*(1), 236. https://doi.org/10.1186/s12982-024-00368-7
Jillian. (n.d.). *Geese* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/geese/169129042
John Muir Trust. (n.d.a). *Our trustees.* https://www.johnmuirtrust.org/about-us/our-trustees
John Muir Trust. (n.d.b). *What we do*. https://www.johnmuirtrust.org/about-us/what-we-do

Johnson, A. J., Glover, T. D., & Yuen, F. C. (2009). “Supporting effective community representation: Lessons from the Festival of Neighbourhoods.” *Managing Leisure*, 14(1), 1–16.
Kaae, B. C., Holm, J., Caspersen, O. H., & Gulsrud, N. M. (2019). Nature Park Amager – examining the transition from urban wasteland to a rewilded ecotourism destination. *Journal of Ecotourism, 18*(4)*, 348–367*. https://doi.org/10.1080/14724049.2019.1601729
Kahraman, M. D., & Türkoğlu, H. (2022). Evolution of city squares and transformation of publicness. A|Z ITU *Journal of the Faculty of Architecture, 19*(1), 69-87. https://doi.org/10.5505/itujfa.2022.15483.
Kamierczak, A. (2013). The contribution of local parks to neighbourhood social ties. *Landscape and Urban Planning*, *109*(1), 31–44. https://doi.org/10.1016/j.landurbplan.2012.05.007.
Kapinon. (n.d.). *Family walking in park (transparent background)* [Photograph]. Adobe Stock. https://stock.adobe.com/
Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 15*(3), 169–182. https://doi.org/10.1016/0272-4944(95)90001-2
kittyfly. (n.d.). *People walking around residential buildings, community with lush greenery and modern architecture, Frankfurt* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/people-walking-around-residential-buildings-community-with-lush-greenery-modern-architecture-and-well-maintained-landscape-apartment-buildings-frankfurt-august-25-2024/1274610304
Kondo, M., Fluehr, J., McKeon, T., & Branas, C. (2018). Urban Green Space and Its Impact on Human Health. *International Journal of Environmental Research and Public Health, 15*(3), 445. https://doi.org/10.3390/ijerph15030445
kromkrathog. (n.d.). *Portrait of attractive cheerful Asian little girl thinking lying on floor during Christmas season, winter, isolated on white background* [Photograph]. Adobe Stock. https://stock.adobe.com/images/portrait-of-attractive-cheerful-asian-little-girl-thinking-looking-lie-down-on-floor-festal-christmas-day-december-winter-full-body-isolated-on-white-and-transparent-background/647161200
Laan, C. M., & Piersma, N. (2021). Accessibility of green areas for local residents. *Environmental and Sustainability Indicators*, *10*, Article 100114. https://doi.org/10.1016/j.indic.2021.100114.
Landau, J. (2025, October 16). *Breathtaking new park to take over 2km-long former Toronto airport runway.* https://www.yzd.ca/news-and-updates/breathtaking-new-park-to-take-over-2km-long-former-toronto-airport-runway
Lister, N.-M., & Careri, S. (2025). Beyond the lawn: Bylaws for biodiversity—Evidence-based recommendations for future practice and policy development. *Cities and the Environment (CATE), 18*(1), Article 8*.* https://digitalcommons.lmu.edu/cgi/viewcontent.cgi?article=1390&context=cate
Lehmann, S. (2021). Growing Biodiverse Urban Futures: Renaturalization and Rewilding as Strategies to Strengthen Urban Resilience. *Sustainability*, *13*(5), 2932. https://doi.org/10.3390/su13052932.
Lev E, Kahn Jr. PH, Chen H and Esperum G (2020) Relatively Wild Urban Parks Can Promote Human Resilience and Flourishing: A Case Study of Discovery Park, Seattle, Washington. Front. Sustain. Cities 2:2. doi: 10.3389/frsc.2020.00002.
Lewis, N. (2025, December 10). Inside the abandoned airport being transformed into a $30 billion sustainable city. CNN. https://www.cnn.com/travel/toronto-downsview-airport-yzd-c2e-spc
Li, Z., Chu, Y., Shi, Y., Huang, N., & Shi, T. (2025). Impact of Urban Green Infrastructure on the Respiratory Health of Older Adults in Shenyang, China. *Forests, 16(*1), 41. https://doi.org/10.3390/f16010041
Logan, S., & Wekerle, G. R. (2008). Neoliberalizing environmental governance? Land trusts, private conservation and nature on the Oak Ridges Moraine. *Geoforum, 39*(6), 2097–2108. https://doi.org/10.1016/j.geoforum.2008.08.009
Lynch, A. J. (2019). Creating Effective Urban Greenways and Stepping-stones: Four Critical Gaps in Habitat Connectivity Planning Research. *Journal of Planning Literature*, *34*(2), 131–155. https://doi.org/10.1177/0885412218798334

Machi, L. A., & McEvoy, B. T. (2016). *The literature review : six steps to success (Third edition.)*. Corwin. https://doi.org/10.4135/9781071939031

Mandritoiu. (n.d.). *Aerial panorama of New York midtown skyline at sunset viewed from above Central Park* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/aerial-panorama-of-new-york-midtown-skyline-at-sunset-viewed-from-above-central-park/295567989

Marek. (n.d.). *Aerial view of glacial rivers in Iceland* [Photograph]. Adobe Stock. https://stock.adobe.com/images/a-glacial-rivers-from-above-aerial-photograph-of-the-river-streams-from-icelandic-glaciers-beautiful-art-of-the-mother-nature-created-in-iceland-wallpaper-background-high-quality-photo/373763177

Maridav. (n.d.). *Woman walking in autumn foliage forest woods in city park with backpack: Travel hike fall destination in Quebec, Canada* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/woman-walking-in-autumn-foliage-forest-woods-in-city-park-with-backpack-travel-hike-fall-destination-in-quebec-canada/383211181

Maryanti, M. R., Khadijah, H., Uzair, A. M., & Ghazali, M. A. R. M. M. (2017). The Urban Green Space Provision Using The Standards Approach: Issues And Challenges Of Its Implementation In Malaysia. *WIT Transactions on Ecology and the Environment, 210,* 369–379. https://doi.org/10.2495/SDP160311

Mason, L., Ronconi, A., Scrimin, S., & Pazzaglia, F. (2022). Short-Term Exposure to Nature and Benefits for Students' Cognitive Performance: a Review. Educational Psychology Review, 34(2), 609–647. https://doi.org/10.1007/s10648-021-09631-8

Mayer, F., Bernbaum, P., Neuhaus, F., & Robertson, N. (2023). Defining wilderness: The evolution of Banff National Park. *Architecture_MPS, 26(1).* https://doi.org/10.14324/111.444.amps.2023v26i1.003

McMenamin, S. (2021). *A need for trees: How Central Park cools the (urban heat) island of Manhattan.* Central Park Conservancy. https://www.centralparknyc.org/articles/how-central-park-cools-the-heat-island

Michael Connor Photo. (n.d.). *Heavy machinery reshaping a river mouth with a city skyline: Toronto Port Lands development* [Photograph]. Adobe Stock. https://stock.adobe.com/images/heavy-machinery-reshaping-a-river-mouth-with-a-city-skyline-white-clouds-and-blue-sky-in-background-room-for-text-shot-toronto-portlands-development/798274774

Mirza, S., Gregory-Eaves, I., & Huot, Y. (2025). Biodiversity Congruence Across Lake-Watershed Landscapes: Insights From an Analysis of 615 Canadian Sites. *Diversity & Distributions*, *31*(5), 1–15. https://doi.org/10.1111/ddi.13953

Monkey Business. (n.d.). *Woman examining leaves on plant during countryside walk* [Photograph]. Adobe Stock. https://stock.adobe.com/images/woman-examining-leaves-on-plant-during-countryside-walk/82814630

Municipal Natural Assets Initiative. (2019). *What are municipal natural assets: Defining and scoping municipal natural assets*. Natural Assets Initiative. https://naturalassetsinitiative.ca/wp-content/uploads/2025/02/SP_MNAI_Report-1-_June2019-2.pdf

Mutlu, A., Roy, D., & Filatova, T. (2023). Capitalized value of evolving flood risks discount and nature-based solution premiums on property prices. *Ecological Economics*, *205*, Article 107682. https://doi.org/10.1016/j.ecolecon.2022.107682

National Lottery Heritage Fund. (n.d.). *Our priorities.* https://www.heritagefund.org.uk/about/our-priorities

Nesbitt, L., Sax, D. L., Quinton, J., Harris, L. M., Camilo Ordóñez Barona, & Konijnendijk, C. (2023). Greening practitioners worry about green gentrification but many don't address it in their work. *Ecology and Society, 28*(4) https://doi.org/10.5751/ES-14579-280429

Northcrest Developments. (2025). 2025–2027 *Indigenous reconciliation action plan.* https://cdn.agilitycms.com/cpfkelaq/YZD_RAP_digital.pdf

Northcrest Developments. (n.d.a). *Who We Are.* https://www.northcrestdev.ca/who-we-are

Northcrest Developments. (n.d.b). *Home.* YZD. https://www.yzd.ca/
Northcrest Developments. (n.d.c). *FAQs.* YZD. https://www.yzd.ca/faqs
Northcrest Developments. (n.d.d). *See & do.* YZD. https://www.yzd.ca/see-and-do
OECD. (2015). *Stakeholder engagement for inclusive water governance*. OECD Studies on Water. OECD Publishing. https://doi.org/10.1787/9789264231122-en
Orstad, S. L., Szuhany, K., Tamura, K., Thorpe, L. E., & Jay, M. (2020). Park Proximity and Use for Physical Activity among Urban Residents: Associations with Mental Health. *International Journal of Environmental Research and Public Health, 17*(13), 4885. https://doi.org/10.3390/ijerph17134885
Oviedo, M., Drescher, M., & Dean, J. (2022). Urban greenspace access, uses, and values: A case study of user perceptions in metropolitan ravine parks. *Urban Forestry & Urban Greening*, *70*, Article 127522. https://doi.org/10.1016/j.ufug.2022.127522
Palmer, B. (n.d.). *Allan Gardens, Toronto: Protest and Public Space – Socialist Project.* https://socialistproject.ca/2025/10/allan-gardens-toronto-protest-and-public-space/
Park, S., & Suh, J. (2025). Who verifies nonprofit information? Understanding trust mechanisms in the nonprofit sector. *Nonprofit Management & Leadership.* https://doi.org/10.1002/nml.70034.
Park People. (2023). *Surfacing solutions: The Canadian City Parks Report 2023.* https://d2023.ccpr.parkpeople.ca/uploads/202307_CCPR_EN_796fd3f604.pdf.
Parks Canada. (2022). *Advisory committee: Rouge National Urban Park.* https://parks.canada.ca/pn-np/on/rouge/info/establishment/comite-committee
Parks Canada. (2025b). *Celebrating Indigenous placekeeping at Rouge National Urban Park.* https://parks.canada.ca/pn-np/on/rouge/autochtone-indigenous/conception-design
Parks Canada. (2024). *Indigenous connections: Banff National Park.* https://www.parks.canada.ca/pn-np/ab/banff/indigenous-connections
Parks Canada. (2025a, May 14). *Indigenous partners: Rouge National Urban Park.* https://parks.canada.ca/pn-np/on/rouge/autochtone-indigenous/partenaires-partners
Parks Canada. (2022, November 19). *Rouge National Urban Park multi-stakeholder and public advisory committee terms of reference.* https://parks.canada.ca/pn-np/on/rouge/info/establishment/comite-committee/terms
Parks Canada. (2025a, May 27). *The Archipelago Management Board: Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site.* https://parks.canada.ca/pn-np/bc/gwaiihaanas/info/coop/amb
Parks Canada. (n.d.). *Thaıdene Nëné Xá* Dá Yáłtı *board members.*
Parks Canada. (2017). *Wapusk National Park management plan, 2017.* https://parks.canada.ca/pn-np/mb/wapusk/info/gestion-management/gestion-management-2017
Parris, K. M., Amati, M., Bekessy, S. A., Dagenais, D., Fryd, O., Hahs, A. K., Hes, D., Imberger, S. J., Livesley, S. J., Marshall, A. J., Rhodes, J. R., Threlfall, C. G., Tingley, R., van der Ree, R., Walsh, C. J., Wilkerson, M. L., & Williams, N. S. G. (2018). The seven lamps of planning for biodiversity in the city. *Cities, 83,* 44–53. https://doi.org/10.1016/j.cities.2018.06.007
Paterson, R. G., Luger, M. I., Burby, R. J., Kaiser, E. J., Malcom, H. R., & Beard, A. C. (1993). Costs and benefits of urban erosion and sediment control: the North Carolina experience. *Environmental Management (New York)*, *17*(2), 167–178. https://doi.org/10.1007/BF02394687
Palmer, B. (2025). *Allan Gardens, Toronto: Protest and public space*. SP: The Bullet. Retrieved from https://socialistproject.ca/2025/10/allan-gardens-toronto-protest-and-public-space/
Paudel, S., States, S. L., & Mainali, K. (2025). Urban greening with biodiverse perennial meadows improves ecosystem services in human dominated landscapes. *Urban Forestry & Urban Greening*, *113*, Article 129014. https://doi.org/10.1016/j.ufug.2025.129014
paulacobleigh. (n.d.). *Moraine Lake in Banff National Park at sunrise* [Photograph]. Adobe Stock. https://stock.adobe.com/images/moraine-lake-in-banff-national-park-in-canada-taken-at-the-peak-color-of-sunrise/293462639

Passakorn. (n.d.). *Spotted deer isolated on transparent background* [Photograph]. Adobe Stock. https://stock.adobe.com/images/spotted-deer-isolated-on-transparent-background-png-file/1070430995
Pressmaster. (n.d.a). *Contemporary young economist analyzing financial diagrams in office* [Photograph]. Adobe Stock. https://stock.adobe.com/images/contemporary-young-serious-economist-analyzing-finnacial-diagrams-and-graphs-on-computer-screen-while-sitting-by-workplace-in-office/488696730
Pressmaster. (n.d.b). *Discussing ideas* [Photograph]. Adobe Stock. https://stock.adobe.com/images/discussing-ideas/87070391
Prosper Portland. (2025). *Who we are.* https://prosperportland.us/who-we-are/
Rawpixel.com. (n.d.). *Group of four diverse seniors relaxing in a park* [Photograph]. Adobe Stock. https://stock.adobe.com/images/group-of-four-diverse-seniors-relaxing-in-a-park-friends-enjoying-nature-happy-seniors-bonding-multicultural-elderly-group-in-nature-healthy-diverse-seniors-exercising-together-at-the-park/1820330221
Refshauge, A. D., Stigsdotter, U. K., & Cosco, N. G. (2012). Adults' motivation for bringing their children to park playgrounds. *Urban Forestry & Urban Greening, 11*(4), *396–405.* https://doi.org/10.1016/j.ufug.2012.06.002
Roach, L. A. (2007). In perpetuity: Governance and capacity building of local land trusts in Ontario [M.E.S., University of Waterloo (Canada)]. https://www.proquest.com/docview/304715126/abstract/391A98EBC3634D0FPQ/1
RogozinskI, M. (n.d.). *Senior couple walking in a park in autumn* [Photograph]. Adobe Stock. https://stock.adobe.com/images/senior-couple-walking-in-a-park-in-autumn/577206050
Rosco1011. (n.d.) *Allan Gardens seen from Jarvis Street in 2025* [Photograph]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Allan_Gardens_seen_from_Jarvis_Street_in_2025.jpg
Rottle, N., Lacson, D., Cromwell, P., Yeh, Y.-J., & Hai, C. (2011). *Shanghai Houtan Park*. Landscape Performance Series. Landscape Architecture Foundation. https://doi.org/10.31353/cs0170
Royal Parks. (2025). *About the Royal Parks charity.* https://www.royalparks.org.uk/about-us/royal-parks-charity
Ryan, L. (2024–2025). Personal photograph collection.
Sabrina. (n.d.). *Crowd of multiracial people having fun in city park* [Photograph]. Adobe Stock. https://stock.adobe.com/images/crowd-of-multiracial-people-having-fun-together-at-city-park-social-gathering-and-community-concept/716617451
Salak, B., Trummer, J., Hegetschweiler, K. T., Fraefel, M., Wunderlich, A. C., Bauer, N., Troll, H., & Hunziker, M. (2026). Integrating physical and social variables to enhance understanding of urban forestry key-indicators: Insights from a socio-cultural forest monitoring. *Urban Forestry & Urban Greening, 118, 129311*. https://doi.org/10.1016/j.ufug.2026.129311
Salzman, J. (1997). Valuing Ecosystem Services. *Ecology Law Quarterly*, *24*(4), 887–903. http://www.jstor.org/stable/24113302
San Francisco Estuary Institute. (n.d.). *Making Nature's City toolkit.* https://www.makingnaturescity.org
Schad, A. N., Kennedy, J. H., Dick, G. O., & Dodd, L. (2020). Aquatic macroinvertebrate richness and diversity associated with native submerged aquatic vegetation plantings increases in longer-managed and wetland-channeled effluent constructed urban wetlands. *Wetlands Ecology and Management*, *28*(3), 461–477. https://doi.org/10.1007/s11273-020-09724-1
Senes, G., Ferrario, P. S., Cirone, G., Fumagalli, N., Frattini, P., Sacchi, G., & Valè, G. (2021). Nature-Based Solutions for Storm Water Management—Creation of a Green Infrastructure Suitability Map as a Tool for Land-Use Planning at the Municipal Level in the Province of Monza-Brianza (Italy). *Sustainability*, *13*(11), 6124. https://doi.org/10.3390/su13116124
Sergiu. (n.d.). *Isolated red-eared slider reptile poses in studio setting, exotic aquatic tortoise animal* [Photograph]. Adobe Stock. https://stock.adobe.com/images/isolated-red-eared-slider-reptile-poses-in-studio-setting-exotic-aquatic-tortoise-animal/1893888458

Sharifi, Y., Sobhani, S., Ramezanghorbani, N., Payab, M., Ghoreshi, B., Djalalinia, S., Nouri Ghonbalani, Z., Ebrahimpur, M., Eslami, M., & Qorbani, M. (2024). Association of greenspaces exposure with cardiometabolic risk factors: A systematic review and meta-analysis. *BMC Cardiovascular Disorders, 24*(1), 170. https://doi.org/10.1186/s12872-024-03830-1

Shimada, D. (2010). *How can societies create common access to nature? The roots and development process of the Bruce Trail, a Canadian case study.* Post-doctoral research paper, York University, Faculty of Environmental Studies. Available online:
http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/7369/356.pdf?sequence=1

Shuda, Q., Bougoulias, M. E., & Kass, R. (2020). Effect of nature exposure on perceived and physiologic stress: A systematic review. *Complementary Therapies in Medicine*, *53*(NA), Article 102514. https://doi.org/10.1016/j.ctim.2020.102514

Skies Mag. (n.d.) *Downsview aerial 7-1*. [Photograph]. Skies Mag

Smardon, R., Moran, S., & Baptiste, A.K. (2018). *Revitalizing Urban Waterway Communities: Streams of Environmental Justice* (1st ed.). Routledge. https://doi.org/10.4324/9781315474977

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104,* 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Song, Z., Seitz, S., Li, J., Goebes, P., Schmidt, K., Kühn, P., Shi, X., & Scholten, T. (2019). Tree diversity reduced soil erosion by affecting tree canopy and biological soil crust development in a subtropical forest experiment. *Forest Ecology and Management*, *444*, 69–77. https://doi.org/10.1016/j.foreco.2019.04.015

Spotswood, E., Grossinger, R. M., Hagerty, S., Bazo, M., Benjamin, M., Beller, E. E., Grenier, L., & Askevold, R. (2019). *Making nature's city*. San Francisco Estuary Institute. https://www.sfei.org/sites/default/files/biblio_files/Making%20Natures%20City%20SFEI%20190905%20lowres.pdf

Stakeholder Forum. (n.d.). *SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable*. https://stakeholderforum.org/sdg-11-make-cities-and-human-settlements-inclusive-safe-resilient-and-sustainable/

Static.Vecteezy. (n.d.). *Two-shelf bracket fungi with intricate porous underside isolated on transparent background* [Photograph]. Vecteezy. https://www.vecteezy.com/png/

Stenfors, C. U. D., Van Hedger, S. C., Schertz, K. E., Meyer, F. A. C., Smith, K. E. L., Norman, G. J., Bourrier, S. C., Enns, J. T., Kardan, O., Jonides, J., & Berman, M. G. (2019). Positive Effects of Nature on Cognitive Performance Across Multiple Experiments: Test Order but Not Affect Modulates the Cognitive Effects. Frontiers in Psychology, 10, 1413. https://doi.org/10.3389/fpsyg.2019.01413

Sterner, R. W., Keeler, B., Polasky, S., Poudel, R., Rhude, K., & Rogers, M. (2020). Ecosystem services of Earth's largest freshwater lakes. *Ecosystem Services, 41*, Article 101046. https://doi.org/10.1016/j.ecoser.2019.101046

StockPhotoPro. (n.d.). *Gardener using a gardening trowel* [Photograph]. Adobe Stock. https://stock.adobe.com/images/gardener-using-a-gardening-trowel/990714707

Sunti. (n.d.). *Beautiful woman practicing yoga in park* [Photograph]. Adobe Stock. https://stock.adobe.com/images/beautiful-woman-practicing-yoga-waterfront-in-the-park/159682306

Syda Productions. (n.d.). *Happy grandmother and granddaughter walking in a summer park* [Photograph]. Adobe Stock. https://stock.adobe.com/images/family-leisure-and-people-concept-happy-grandmother-and-granddaughter-walking-at-summer-park/246785232

The High Line. (n.d.). *Sustainable practices*. The High Line. Retrieved February 18, 2026. https://www.thehighline.org/sustainable-practices/

Thickson's Woods Land Trust. (n.d.a). *Saving Thickson's Woods* https://www.thicksonswoods.com/saving-thickson-s-woods/about-thickson-s-woods-land-trust/

Thickson's Woods Land Trust. (n.d.b). *Treasure Hunt.* https://thicksonswoods.com/visit/treasure-hunt/

Thickson's Woods Land Trust. (n.d.c). *Partners in protection.* https://www.thicksonswoods.com/contact-us/partners-in-protection

Thickson's Woods Land Trust. (2020, Autumn). *Newsletter 58* [Newsletter]. https://thicksonswoods.com/data/documents/Thicksons-Newsletter-58-Autumn-2020.pdf
Timko, J. A., & Satterfield, T. (2008). Criteria and Indicators for Evaluating Social Equity and Ecological Integrity in National Parks and Protected Areas. *Natural Areas Journal, 28*(3), 307–319. https://doi.org/10.3375/0885-8608(2008)28[307:CAIFES]2.0.CO;2
Toronto and Region Conservation Authority. (n.d.). *TRCA Governance.* https://trca.ca/about/governance/
Toronto Foundation. (2024). *Annual report 2024.* https://torontofoundation.ca/annual-report-2024/
Tribal Nations Maps. (n.d.). *Tribal nations map* [Photograph]. //www.tribalnationsmaps.com/uploads/1/0/4/5/10451178/s366865341169104376_p1745_i1_w1152.jpeg
Turenscape. (n.d.). *Houtan Park Park* [Photograph]. https://www.turenscape.com/en/project/detail/4647.html
Tworoetimes. (n.d.). *SNEC logo* [Photograph].
SNEC_Logo_Approved_FINAL-1.jpg
Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*(3), 201–230. https://doi.org/10.1016/S0272-4944(05)80184-7.
United Nations Environment Programme. (2021). *State of Finance for Nature 2021.* https://www.unep.org/resources/state-finance-nature.
University of Toronto Asset Management Corporation. (2025). *UTAM 2024 annual report: The long view.* https://www.utam.utoronto.ca/wp-content/uploads/2025/06/UTAM-2024-Annual-Report.pdf
Vagengeim. (n.d.). *Clusters of brown mushrooms growing from forest trunk* [Photograph]. Adobe Stock. https://stock.adobe.com/images/clusters-of-brown-mushrooms-grow-from-a-mossy-decaying-forest-trunk-surrounded-by-grass-and-wild-plants-highlighting-woodland-biodiversity-and-natural-decomposition-cycles-nature-of-sakhalin-island/1778628273
van Rees, C. B., Hernández-Abrams, D. D., Shudtz, M., Lammers, R., Byers, J., Bledsoe, B. P., Bilskie, M. V., Calabria, J., Chambers, M., Dolatowski, E., Ferreira, S., Naslund, L., Nelson, D. R., Nibbelink, N., Suedel, B., Tritinger, A., Woodson, C. B., McKay, S. K., & Wenger, S. J. (n.d.). Reimagining infrastructure for a biodiverse future. *Proceedings of the National Academy of Sciences of the United States of America, 120*(46), e2214334120. https://doi.org/10.1073/pnas.2214334120
Van Riel, A., & Snyder, H. (2024). Enhancing the impact of literature reviews: guidelines for making meaningful contributions. *Spanish Journal of Marketing-ESIC, 28*(3), 250–265. https://doi.org/10.1108/SJME-05-2024-0125
Visseren-Hamakers, I. J., & Kok, M. T. J. (Eds.). (2022). *Transforming Biodiversity Governance.* Cambridge University Press. https://doi.org/10.1017/9781108856348
Volodymyr. (n.d.). *Funny little kid climbing tree in garden* [Photograph]. Adobe Stock. https://stock.adobe.com/images/funny-little-kid-enjoying-summer-in-a-garden-cute-child-climbing-the-tree-kids-playing-outdoor/425496801
Wandio, C., & Barndt, J. (2024). *Scaling the community-based CLT: A case study of The Neighbourhood Land Trust.* The Neighbourhood Land Trust & Canadian Network of Community Land Trusts. https://pnlt.ca/cms/custom/uploads/2025/02/Scaling-the-Community-Based-CLT_A-Case-Study-of-The-Neighbourhood-Land-Trust_2024-1.pdf
Wang, B., Shuman, J., Shugart, H. H., & Lerdau, M. T. (2018). Biodiversity matters in feedbacks between climate change and air quality: a study using an individual-based model. *Ecological Applications*, *28*(5), 1223–1231. https://doi.org/10.1002/eap.1721
Waterfront Toronto. (n.d.a). *Don mouth naturalization and Port Lands flood protection.* https://www.waterfrontoronto.ca/our-projects/don-mouth-naturalization-and-port-lands-flood-protectio
Waterfront Toronto. (n.d.b). *Who we are.* https://www.waterfrontoronto.ca/about-us/who-we-are

Wei, M., Sun, Q., & Liu, D. (2025). Moss Cover Modulates Soil Fungal Functional Communities and Nutrient Cycling in Alpine Forests. *Forests, 16*(1), 138. https://doi.org/10.3390/f16010138

White78. (2025). *Cyclist at golden hour riding through Manhattan's High Line* [Photograph]. Adobe Stock. https://stock.adobe.com/ca/images/new-york-usa-8-august-2025-cyclist-at-golden-hour-cyclist-riding-through-golden-hour-light-along-the-rails-of-manhattanrs-high-line/1854136821

White, M. P., Alcock, I., Grellier, J., Wheeler, B. W., Hartig, T., Warber, S. L., Bone, A., Depledge, M. H., & Fleming, L. E. (2019). Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Scientific Reports, 9*(1), 7730. https://doi.org/10.1038/s41598-019-44097-3

Wikimedia Commons. (n.d.). *Ducks Unlimited Canada logo*. (n.d.). [Photograph]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Ducks_Unlimited_Canada_logo.svg

Wilson, E. O. (1993). "Biophilia and the Conservation Ethic," in *The Biophilia Hypothesis*. Eds. S. R. Kellert and E. O. Wilson (Island Press, Washington, D.C), 31–41.

Wolch, J. R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough.' *Landscape and Urban Planning*, *125*(Complete), 234–244. https://doi.org/10.1016/j.landurbplan.2014.01.017

WWF. (2018, December 28). *Peru's natural legacy phase 1: Effective management of the Peruvian Amazon for climate change mitigation and adaptation* [Concept note]. https://wwflac.awsassets.panda.org/downloads/anexo_a_cn_wwf_20181228.pdf

Wu, H., Hoffman, M. C., Wang, R., Kelley, K. M., & Adib, M. (2024). Revealing Public Perceptions of Biodiverse vs. Turf Swales: Balancing Enhanced Ecosystem Services with Heightened Concerns. *Water, 16*(20), 2899. https://doi.org/10.3390/w16202899

Yoo, C. (2024). *Champlain Housing Trust: Affordable housing through community land ownership*. The Progress and Poverty Institute. https://progressandpovertyinstitute.org/champlain-housing-trust-affordable-housing-through-community-land-ownership/

York University Faculty of Environmental & Urban Change. (n.d.). *YouTube channel*. YouTube. https://www.youtube.com/channel/UCZa2idFbELex38fog88FpZQ

Zhang, Y., Wu, T., Yu, H., Fu, J., Xu, J., Liu, L., Tang, C., & Li, Z. (2024). Green spaces exposure and the risk of common psychiatric disorders: A meta-analysis. SSM - *Population Health, 25*, 101630. https://doi.org/10.1016/j.ssmph.2024.101630

Zingraff-Hamed, A., Hüesker, F., Albert, C., Brillinger, M., Huang, J., Lupp, G., Scheuer, S., Schlätel, M., & Schröter, B. (2021). Governance models for nature-based solutions: Seventeen cases from Germany. *Ambio, 50*(8), 1610–1627. https://doi.org/10.1007/s13280-020-01412-x

Zinkevych. (n.d.). *Adolescents working in volunteer group* [Photograph]. Adobe Stock. https://stock.adobe.com/images/adolescents-working-in-volunteer-group/165529054