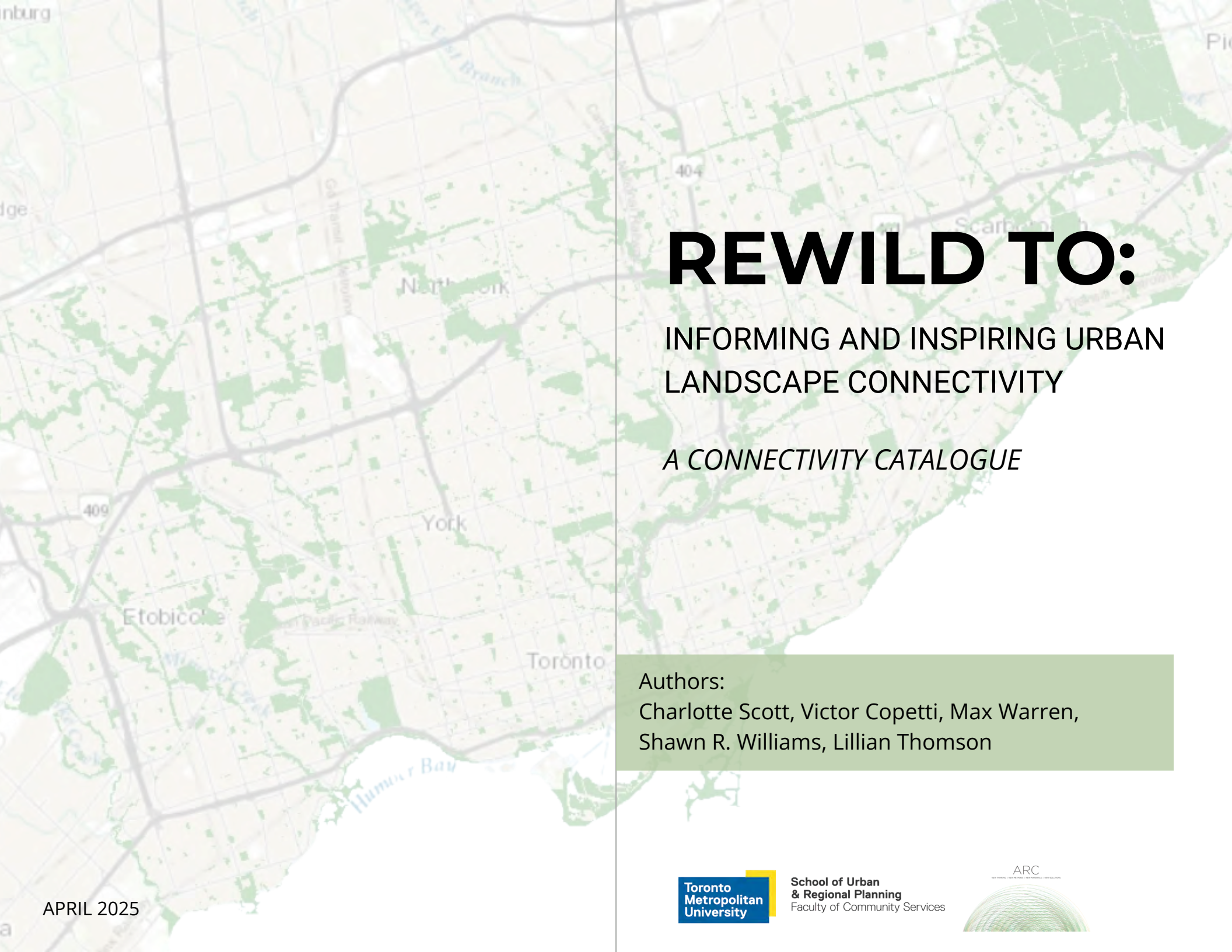

REWILD TO:

INFORMING AND INSPIRING URBAN LANDSCAPE CONNECTIVITY

A CONNECTIVITY CATALOGUE

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This report is a pilot project for a longer-term project in partnership with the Ecological Design Lab and ARC Solutions, supervised by Professor Nina-Marie Lister, MCIP, RPP, Hon. ASLA.

Land Acknowledgement

We have the privilege of honouring and holding space and gratitude for the land of which is poroject is situated.

Toronto rests on the lands of the traditional territory of many nations, including the Mississaugas of the Credit, the Anishinaabeg, the Chippewa, the Haudenosaunee and the Wendat Peoples. They are covered by Treaty 13 with the Mississaugas of the Credit, and is also covered by the Dish with One Spoon Wampum Belt Covenant, which is an agreement to care for the land and each other.

Toronto's name is rooted in Indigenous languages. Tsi Tkaron:to (tik koronto) is Mohawk for 'Where the Trees Float in Water. ' This name reminds us of the interconnected history of these lands, which have been here since time immemorial.

While change has occurred over time, a constant is that these lands and waters have provided a place to live, gather, grow, learn, play, and celebrate for many beings and communities. Our discussion about re-wilding and connectivity goes beyond just the plants and animals we see around us, but our connection to them as humans. We all share a responsibility and commitment to protect and restore the land on which we live.

https://www.toronto.ca/wp-content/uploads/2024/05/9092-Indigenous-Month-Web-Banner-1024x338-1.jpg

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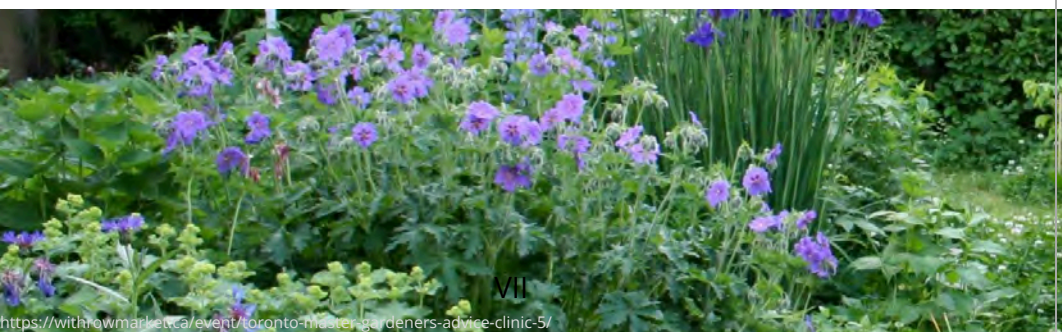
Summary

The Rewild TO report presents a collaborative project between TMU's School of Urban and Regional Planning and ARC Solutions, aimed at enhancing biodiversity through improved urban landscape connectivity in the Greater Toronto Area. The project specifically focuses on integrating public and private lands to create connected green networks in urban environments, addressing the twin challenges of climate change and biodiversity loss. By examining literature, policies, and spatial data, the report identifies opportunities to bridge the gap between public and private property naturalization efforts and broader ecological connectivity goals.

The report includes a connectivity catalogue featuring six types of urban green spaces (POPS, green roofs, parks, recreation centres, hydro corridors, and business parks) with their associated barriers and opportunities. Geospatial analysis identified "keystone neighbourhoods" with the highest connectivity potential, revealing that affluence often correlates with connectivity opportunities. The policy analysis exposed gaps in municipal frameworks, particularity regarding private landowner incentives and climate adaptation for wildlife. Finally, the report concludes with a roadmap for future work, emphasizing the need for Indigenous partnerships, expanded mapping analysis resources, and strategies to support private residential rewilding efforts to create a more connected and resilient urban landscape.



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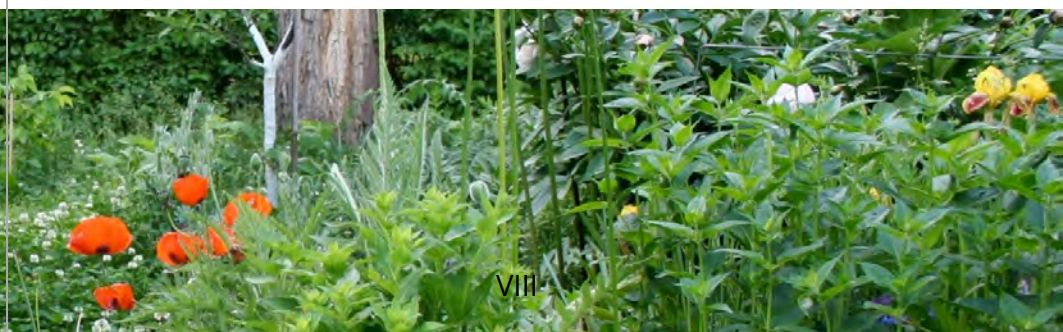

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Foreword

In an era of evolving environmental change, the importance of maintaining and restoring landscape connectivity has never been more critical. The goal of our work is to bridge the gap between private and public land to enhance the potential of urban landscape connectivity. This catalogue represents a collective effort to bring together literature, strategy, and real-world application in service of a more connected and resilient landscape. Whether your focus is ecological integrity, climate adaptation, or sustainable development, the tools and case studies within this catalogue are designed to inspire action and foster collaboration across sectors.

To the City of Toronto municipal staff, we believe this report is a foundation for improving planning strategies and policies to ensure consistent and strategic consideration for urban landscape connectivity. The recommendations in this report align with the values of the City, with special regard to reconciliation with Indigenous peoples. Furthermore, increasing naturalized spaces aligns with the principles of climate resilience through stormwater mitigation, heat island effect reduction, and carbon sequestration.

To the private property owners, including residential, commercial, faith-based organizations, and business improvement area staff, we believe increasing naturalized green spaces improve health, economic, aesthetic, and environmental outcomes. This catalogue focuses primarily on spaces that overlap with the public realm or have current regulations in place as the start of increasing connectivity between private and public spaces. We hope that by highlighting the potential of business parks and POPS, private landowners will be inspired in other areas as well.

Finally, to the real estate professionals, landscape architects, and landscapers, we hope that this report serves as a platform to re-imagine the value of green spaces beyond the aesthetic and commercial value, and to re-imagine your roles as caretakers of the land on which we live.

To the conservation, gardening, and rewilding advocacy groups, we hope that this report inspires advocacy and educational campaigns. We identify strategies and recommendations that we hope will encourage collaboration, as we recognize this work would not be possible without individuals willing to put time and effort into cultivating and stewarding the land around us.

We believe that by prioritizing connectivity, we are not only safeguarding biodiversity, but also investing in the health and sustainability of the landscapes that support our communities, economies, and future generations.

Thank you for your interest, and for being part of this essential conversation.

Sincerely,
Charlotte Scott, Victor Copetti, Max Warren, Shawn R. Williams, Lillian Thomson.

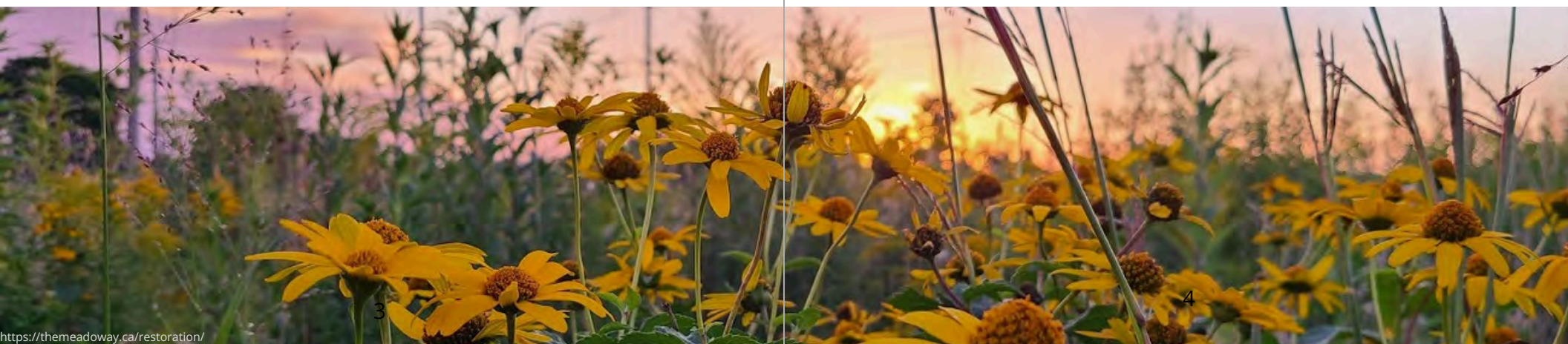
https://www.rewildingmag.com/rewilding-yard-not-illegal/

1.0 INTRODUCTION

Introduction

The world is currently facing twin crises of climate change and biodiversity loss (IUCN, 2023). Habitat is required for biodiversity, however, development by humans has caused habitat fragmentation resulting in small, disconnected habitat patches of low quality (Lynch, 2018). Conservation efforts focused on connectivity (the unimpeded movements of animals and plants across the landscape) seek to reconnect separate habitat patches as well as preserve larger, intact habitats. In urban areas, preservation of large areas is not always possible or practical (Lynch, 2018), but there are still many opportunities to improve connectivity.

This studio will explore such opportunities for recovering and regenerating biodiversity through integrated urban connectivity strategies that link private lands with public lands in the Greater Toronto Area (GTA). This project builds on the work of the Bylaws for Biodiversity project, which focuses on bylaw reform to advance the rights of private property owners to naturalize their own yards. Working with ARC Solutions, The ReWild TO project aims to go "beyond the bylaw" by focusing on supporting the efforts of private and public landowners to contribute to broader urban connectivity goals.



https://themeadoway.ca/restoration/

1.1 Background & Context

"ARC is an international network whose mission is to identify and promote leading-edge solutions to improve human safety, wildlife mobility and long-term landscape connectivity" (Who is ARC, 2025). What began as the ARC International Wildlife Crossing Infrastructure Design Competition in 2010 has grown into a global organization with a mission to Innovate, Educate, and Motivate the public and a diverse range of interdisciplinary stakeholders regarding the importance of wildlife crossings (What is ARC, 2025). The ReWild TO project is part of an ongoing funded research partnership with ARC Solutions.

In terms of the municipal-regional context, municipalities throughout North America are seeking to support urban biodiversity through policy and planning tools. Many of these policies and planning tools address urban biodiversity on public lands, but very few address private lands. However, lawn naturalization, habitat gardening, and rewilding have increased in popularity among private landowners. This suggests that there are opportunities to include private properties in broader biodiversity conservation strategies. That is where the ReWild TO project comes in.

This project aims to advance landscape and habitat connectivity for biodiversity conservation and recovery across the Greater Toronto Area (GTA) urban region by considering public and private lands as part of integrated, systems-based planning for biodiversity recovery and climate resilience. Current strategies for biodiversity conservation and recovery remain focused largely on public lands. Therefore, this project will explore opportunities and barriers in different types of public lands e.g. municipal ROWs (rights-of-ways), boulevards, and public community spaces as well as private lands, e.g. POPS (privately-owned publicly-accessible spaces), naturalized lawns, and habitat gardens.

Amid a global biodiversity crisis, all levels of government in Canada have made commitments to the protection of nature. Habitat loss is one of the primary causes of biodiversity decline, and thus, strategies to protect nature must focus on the protection, recovery, restoration and reconnection of habitat. Increasingly, municipalities in Canada are implementing policy reforms to advance biodiversity strategies on public and private lands, such as through

updating zoning bylaws and municipal codes aimed at facilitating “naturalization” or the recovery and restoration of habitat. However, despite these strategies and reforms, there remain contradictions between biodiversity goals and existing municipal policies, most noticeably in property maintenance bylaws, resulting in enforcement actions taken against naturalized garden owners.

Landscape design and environmental planning strategies that conserve, connect, regenerate or recover biodiversity on private property have grown in popularity over the last two decades. Research has demonstrated that the benefits of natural and naturalized spaces extend beyond wild species (biodiversity) to include humans—specifically, therapeutic benefits for human physical and mental health and well-being.

https://www.rewildingmag.com/rewilding-yards-not-illegal/

1.2 Literature Review

Introduction

The goal of this project is to identify opportunities where rewilding efforts can be used to establish and enhance habitat connectivity between public and private spaces. We reviewed the literature through this lens and with these questions in mind:

- Why is connectivity important?
- What does successful urban connectivity look like?
- Where should connectivity efforts be focused?

As our literature review progressed, we began to develop and focus on 4 themes: Key Neighbourhood Features, Urban Connectivity, Private Property Rewilding, and Stakeholder and Community Engagement. In the following paragraphs we will explore our guiding questions, laying a foundation of current habitat connectivity and rewilding knowledge, before transitioning to the 4 themes.

Why is Connectivity Important?

Connectivity is critical to ensuring ecological processes are connected across ecosystems. The functioning of ecological processes is necessary to ensure biodiversity is resilient across different species populations, communities, and ecosystems (Baldwin et al., 2018; Oppler et al., 2021; Convention on Migratory Species, 2020).

In response to increasing risks affecting biodiversity, a number of multilateral environmental agreements have been created to address the global challenges. As part of broader goals, the Convention on Biological Diversity aims to conserve 30% of global land, sea and freshwater ecosystems by 2030. Specifically, Target 11 of the Global Biodiversity Framework acknowledges that to abate further biodiversity loss it is necessary to support the development of well-connected ecosystems through protected areas and other effective area-based conservation measures (Lemieux et al., 2022).

In 2024, the Convention on Migratory Species developed the Samarkand Strategic Plan for Migratory Species. Recognizing the importance of connectivity, the vision for the strategic plan states the ambition that, “By 2032, migratory species are thriving and live in fully restored and connected habitat” (Convention on Migratory Species, 2024). Improving functional ecological connectivity increases the resilience of species habitat fostering better outcomes related to biodiversity, plants, animals and ecological processes (Oppler et al. 2021). Importantly, it should be noted that ecological connectivity is also necessary to support climate change mitigation and adaptation efforts, allowing species and ecosystems to respond with range shifts (Littlefield et al., 2019). Due to climate change wildlife species are expected to shift habitat and migration patterns to adapt to changing environments (Newell et al., 2022). Even the largest protected and conserved areas may be smaller than the distances travelled by wide-ranging species (Carroll & Noss, 2021).

The Importance of Biological Diversity

As explained in the previous section, connectivity enables biological diversity across ecosystems. However, it is also important to understand the role of biodiversity in sustaining life on the planet. Biodiversity plays a critical role in human life (IPBES, 2019).

The role of biodiversity in sustaining human life includes:

- Over 2 billion people rely on wood fuel as their primary energy source.
- An estimated 4 billion people depend primarily on natural medicines for health care.
- Approximately 70 percent of cancer drugs are derived from or inspired by nature.
- More than 75 percent of global food crops depend on animal pollination.
- Roughly 60 percent of anthropogenic emissions are sequestered by ecological systems.

While the highlighted examples illustrate ways biodiversity helps sustain human life, it is important to acknowledge its role in sustaining ecosystems and life more broadly. Furthermore, it is important to recognize loss of biodiversity across the globe (IPBES, 2019).

Risks threatening global biological diversity include:

- An average of around 25 percent of species are threatened, suggesting that an estimate of up to one million species are at risk of extinction within decades.
- Land degradation has reduced productivity in 23 percent of the globe's terrestrial area.
- By 2016, 559 of the 6,190 domesticated breeds of mammals used for food and agriculture (over 9 percent) had become extinct and at least 1,000 more are threatened.

What Does Successful Urban Connectivity Look Like?

It is important to acknowledge that there are different types of connectivity. Landscape connectivity refers to the connectedness of land cover types as perceived by humans. Habitat connectivity refers to the connectedness of habitat for a given taxon. Ecological connectivity is the connection of ecological processes at different spatial and geographic scales (Lindenmayer et al., 2008; Lindenmayer & Fischer, 2007).

Ecological connectivity can be further defined as "the unimpeded movement of species and the flow of natural processes that sustain life on Earth" (Lindenmayer et al., 2008; Oppler et al., 2021). Furthermore, connectivity can also be categorized as being functional; structural; genetic; riverscape; seascape (Correa et al., 2016).

Defining the different forms of connectivity and their constituent components can help ground planning and policy in scientifically based research and understanding. Identifying which form of connectivity is being addressed in a given plan or policy also ensures the accurate monitoring of goals and objectives related to ecological processes and biodiversity.

Similar to definitions of connectivity, structural definitions of rewilding focus on the design and structure of protected areas and landscapes. Process-oriented definitions of rewilding focus more squarely on restoration and ongoing resilience of ecological processes that underpin ecosystems (Carroll & Noss, 2021).

Rewilding also encompasses different interpretations and objectives. As noted by Pettorelli et al. (2019) across several definitions of rewilding, three themes seem to emerge. The first theme relates to the restoration of wildness and biodiversity without subsequent interference or utility to humans. The second theme relates to the reintroduction of species that are no longer present back into an ecosystem to attain its former functionality with potential benefits to humanity. The third theme of rewilding recognizes that the human perception of socio-ecological costs and benefits dictate what plant, animal species and ecological processes are prioritized (Pettorelli et al., 2019). Rewilding is a concept and approach that aims to expand the conservation, preservation and connectivity of ecological networks through naturalization and restoration of ecosystems (Carroll & Noss, 2021).

In practice, concentrations of connectivity, biodiversity, and rewilding can be seen in certain urban areas. As cited by Aronson (2017), there is a correlation between wealth and biodiversity (Grove et al., 2014; Lubbe et al., 2010). According to Brander and Koetse (2011), the correlation is a function of housing prices, access to green space, and the ability to landscape and buy plants. This may not be the case in different geographic areas and have implications for equity (Gaston et al., 2007).

Further influencing concentration of connectivity, biodiversity, and rewilding is coordination of efforts for greater impact. Residents undertaking rewilding may be unaware of how to coordinate their efforts with other neighbourhoods for larger impact (Aronson et al. 2017). This may be inhibited by a mix of preferences and social pressures that influence people's choice of lawn-keeping, and result in social diffusion that can support or harm biodiversity (Aronson, 2017; Fraser et al., 2013; Goddard et al., 2013).

Where Should Connectivity Efforts be Focused?

Key Neighbourhood Features

We began to develop a list of criteria for municipalities to use to select sites on which to focus connectivity improvement efforts. The list later evolved into a set of Key Neighbourhood Features, features in neighbourhoods indicating connectivity improvement opportunities, that informed our catalogue of green typologies and spatial analysis (these will come later in this report). A major consideration for site selection that emerged from the literature is climate change. Connectivity efforts must consider areas' current and future temperatures, (Carroll & Noss, 2021) identifying "climate analogues," (Merenlender et al., 2022) meaning a region that has the same projected future climate conditions that another region has currently. Even large protected areas might not be large enough to encompass the climate diversity needed to retain species, making connectivity even more important (Merenlender et al., 2022).

Also relevant to the development of site selection criteria were the findings that school lawns can function as stepping stones for species movement (Ioja et al., 2014), as can green spaces on private business sites (Serret et al., 2014). Groups of neighbouring yards were found to be more important for native bird species richness than other environmental characteristics, such as tree canopy coverage, at the neighbourhood scale (Belaire et al., 2014). It was also found that connecting even small parks to other green spaces was effective for supporting breeding birds (Huang et al., 2015).

Other factors, such as "anthropogenic resistance" meaning the impact of human behaviours on species' ability to move through the landscape (Ghoddousi et al., 2021) and determining connectivity goals, such as connectivity for specific species or broader ecosystem connectivity (Lindenmayer & Fischer, 2007), are also key.

Urban Connectivity

There are unique challenges to improving connectivity in urban areas, but they also have great potential, as areas of high biodiversity, to be impactful for conservation (McKinney, 2008). The two main strategies for enhancing urban connectivity are 'stepping stone' and 'corridor' strategies (Lynch, 2019). Stepping stones refer to small habitat patches that are close enough that animals can use them to travel to larger habitat patches, while corridors act as paths connecting patches. Recent research shows a focus on stepping stone strategies, highlighting the role of green roofs and residential yards in supporting urban biodiversity. However, many cities are still focusing on corridors, often referred to as 'greenways' (Lynch, 2019). This suggests that there is a disconnection between urban connectivity practice and research, and that there is a need for explicit connections to be made between urban connectivity research and its application to planning strategies (Lynch, 2019).

Research shows that greenways are more often planned for recreational use, and may not have conservation goals (Lynch, 2019). To be effective wildlife corridors, greenways must have wide buffers of natural space away from biking and walking paths (Lynch, 2019).

Many of the smaller habitat patches found in urban areas, such as green roofs, private yards, road verges, bioswales, and small parks, as well as informal and interstitial spaces such as vacant lots, railways, and other areas of unmanaged vegetation can facilitate urban connectivity as stepping stone habitat patches (Lynch, 2019).

Both greenways and stepping stones should be planned to connect to larger habitat patches (a great example of this is the Meadoway in Toronto that connects downtown Toronto to Rouge Park by way of a naturalized hydro corridor). Private landowners around greenways and stepping stones should be encouraged to manage their property as habitat (Lynch, 2019).

Private Property Rewilding

Rewilding is a key concept behind the call for an expansion of protected area networks (Carroll & Noss, 2021). There are both structural and process-oriented definitions of rewilding, with structural meaning the design and structure of an area, and process-oriented meaning the restoration of ecosystem processes (Carroll & Noss, 2021) It's important to note that rewilding, especially rewilding by private property owners, is not a passive approach (Adler, 2020). Rewilding also requires maintenance, including planting native species and removing invasives, creating habitat by adding landscape elements, and sometimes protecting vegetation from animals (Adler, 2020).

Private yards comprise a significant amount of the urban green space in many countries (Goddard et al., 2010) and so they have great potential for enhancing connectivity. Private property rewilding efforts are happening in Toronto and in many other places. There are several initiatives by NGOs in developed countries that encourage wildlife friendly

gardening, such as the USA National Audubon Society 'Audubon at Home' project, the USA National Wildlife Federation Backyard Habitat Certification program, and the UK Royal Society for the Protection of Birds 'Homes for Wildlife' project (Goddard et al., 2010), as well as Project Swallowtail here in Toronto, and the David Suzuki Foundation Butterflyway Project. Gardens can be crucial in raising awareness about biodiversity (Goddard et al., 2010) and it's important that they are not viewed as separate entities at the individual level, but as a network that should be managed collectively (Goddard et al., 2010).

Stakeholder & Community Engagement

Collective management requires stakeholder and community engagement. Stakeholder and community engagement are important for the success of all kinds of conservation efforts. For example, stakeholder engagement has been shown to enhance Natural Heritage System planning, increasing feelings of ownership and stewardship related to NHS plans (DeLoyde, 2020; Puric-Mladenovic & Strobl, 2012).

Similarly, discussing rewilding efforts with neighbours and sharing information to raise awareness about habitat fragmentation and biodiversity can generate support and enthusiasm (Wei, 2023). This is especially important for the success of rewilding efforts considering that attitudes and perceptions held by people can be a predictor of their behaviour towards wildlife (Ghoddousi et al., 2021). Positive attitudes can lead to behaviour such as rewilding (Ghoddousi et al., 2021).

Private landowners and community members are valuable resources of information for municipalities and others working to advance habitat connectivity goals (Goddard et al., 2010). Initiatives such as the RSPB Big Garden Birdwatch and the British Trust for Ornithology Garden BirdWatch programs in the UK, and Project FeederWatch in the US and Canada engage the public for data collection (Goddard et al., 2010). At Toronto Metropolitan University, the Ecological Design Lab has been developing a Wildlife Crossing Database Platform as part of the Safe Passages: Towards an Integrated Planning Approach for Landscape research project. The database will harness the knowledge of both

practitioners and members of the public, and facilitate information sharing and mapping of wildlife crossing data (Newell et al., 2020).

Conclusion

Habitat connectivity is crucial for the preservation of biodiversity and the health of ecosystems, and ultimately the health of the entire planet. Rewilding, the deliberate restoration or naturalization of a landscape, can be a key tool for enhancing and preserving habitat connectivity in urban areas. With any connectivity improvement efforts, it is important that such factors as climate change, anthropogenic resistance, and whether yards are separate or grouped be taken into account and that connectivity goals are clearly defined. Urban areas offer a variety of public and private spaces that can contribute to habitat connectivity: parks, green roofs, private yards, school lawns, and railways, to name a few. Many people in Toronto and other cities around the world are already rewilding their yards to provide habitat for local wildlife. It is clear from the literature that the potential for enhancing connectivity between public and private spaces is underexplored, but with the knowledge gained from our review we were able to forge ahead and identify important opportunities that will be discussed later in the report.

2.0 POLICY ANALYSIS

2.1 Method

To provide recommendations for improving landscape connectivity between private and public lands in the urban context through land use planning policies, we conducted a qualitative content analysis on the policy and strategy sources from GTA-based and Ontario provincial legislation. This method of analysis involves the coding of data, meaning categorizing the policies into identified codes (or labels). We initially selected eighty-nine (89) policies that applied to the primary code “landscape/habitat connectivity” based on our literature review. Policies from the strategy documents were then placed into a data matrix to sort each policy into private, public, or both categories. This categorization allowed us to review gaps and opportunities that applied to the public, private, or both sectors. However, the different goals of each document created a limitation in providing conclusive recommendations.

To further filter the policies relevant to this project, we reviewed the policies according to secondary codes of “recognition of landscape connectivity,” “climate resilience,” “collaboration,” and “incentives for urban connectivity” in alignment with the values and principles of reconciliation as identified in the City of Toronto Official Plan (2024). This resulted in a total of thirty-four (34) policies selected to be included in our analysis (see Appendix b). To determine what incentives are currently available, we reviewed the publicly available information on the City of Toronto website (as of March 2025).

2.2 Analysis

Documents Reviewed

- City of Toronto Municipal Bylaws (2025)
- City of Toronto's Official Plan (2024)
- Greenbelt Plan (2017)
- Parkland Strategy: Growing Toronto Parkland (2019)
- Toronto's First Resilience Strategy (2018)
- Toronto Green Standard (2022)
- Toronto Green Street Technical Guidelines (2017)
- Toronto Pollinator Protection Strategy (2018)
- Toronto Ravine Strategy (2017)
- Toronto's Strategic Forest Management Plan (2012)
- TRCA Strategic Plan 2023-2034 (2023)
- TRCA Updated Target Natural Heritage System (2022)
- Wild, Connected and Diverse: A Biodiversity Strategy for the City of Toronto (2019)

Codes

Brief Description of Codes Identified through the Qualitative Content Analysis

Recognition of Landscape Connectivity: Acknowledging landscape connectivity as a critical element of urban planning legitimizes the need for action. By explicitly identifying connectivity in strategies, the City can create a foundation for more targeted initiatives.

Climate Resilience: Climate resilience strategies should include ecological adaptation alongside human-focused adaptation. Enhancing landscape connectivity supports species migration, mitigates the urban heat island effect, and improves stormwater management.

Collaboration: Effective implementation of landscape connectivity requires engagement with diverse stakeholders, including Indigenous communities, conservation organizations, and local property owners.

Incentives for Urban Connectivity: Financial and regulatory incentives drive participation in biodiversity-enhancing projects. Without dedicated incentives, private landowners might focus on priorities other than connectivity efforts.

Qualitative Content Analysis

Recognition of Landscape Connectivity

From a regional perspective, the Toronto and Region Conservation Authority (TRCA) recognizes the importance of landscape/habitat connectivity in the *Updated Target Natural Heritage System* (2022). To improve connectivity, the TRCA will use geospatial analysis to identify key areas of improvement and conservation for municipalities to consider when expanding their urban boundaries. The *Greenbelt Plan* emphasizes maintaining protected vegetative zones and interconnectivity with existing corridors. While landscape connectivity is recognized, considerable improvements are needed at the municipal level.

The Official Plan of Toronto identifies sustaining, restoring and enhancing the natural environment by paying attention to “natural linkages between the natural heritage system and other green spaces” (City of Toronto, 2024b, 3.4.1). In the municipal bylaws, landscape connectivity was identified as a

specific goal in recent secondary plans, including the Downsview, Don Mills, and Central Waterfront Secondary Plans. In the Downsview Secondary Plan, the City identifies a specific right-of-way called a Green Spine that will function as a “Landscaped and naturalized corridor that will support the expansion of the urban tree canopy, habitat connectivity and species diversity” (City of Toronto, 2024a, 3.4.(b)).

In alignment with the TRCA, Toronto’s Strategic Forest Management Plan highlights the need to secure land to improve connections between parkland and natural heritage systems and habitat linkages (6.5.2). The Ravine Strategy reinforces identifying targeted land acquisition to increase landscape connectivity. The strategy that recognizes landscape connectivity most clearly is the Toronto Pollinator Protection Strategy, in which Action 6 intends to find opportunities to improve habitat connections and encourage the creation of pollinator “pathways.” The Pollinator Protection Strategy further elaborates on this intention by identifying key stakeholders with which to engage, which will be discussed in the ‘Collaboration’ section. In contrast to the Pollinator Protection Strategy, the Biodiversity Strategy and Parkland Strategy do not address landscape connectivity in such regard.

In *Wild, Connected and Diverse: A Biodiversity Strategy for the City of Toronto*, landscape connectivity in the urban environment is not directly addressed. While the document does identify greenway corridors and stepping stones as essential habitats, the action steps to address these items are limited. First, Action 14 states: “TRCA to identify locations to facilitate habitat connectivity and wildlife movement” for eco-passage and wildlife corridors without further identification of stakeholders (City of Toronto, 2019b, p.50). Secondly, Action 15 states the City will “Review and update existing City design standards, guidelines and incentive programs to support biodiversity” without direct targets related to landscape connectivity (City of Toronto, 2019b, p.50). This lack of specificity is also in the Parkland Strategy.

In the Parkland Strategy, while connectivity is recognized, it is more in relation to improving the public realm for humans. Out of the seven steps related to connectivity, one statement of intent states, “Recognize the role and importance of parks in supporting biodiversity and as wildlife corridors, and help to contribute to that role” (City of Toronto, 2019a, p.41). However, no further steps identify how parks would help improve linkages between parks and open spaces for flora and fauna.

Climate Resilience

Recognizing the importance of landscape connectivity within climate resilience aligns with land stewardship by including the adaptation and migration of flora and fauna. Even though the City of Toronto's Official Plan takes a stewardship approach regarding the natural environment (2024b, 3-43), *Toronto's First Resilience Strategy* focuses on the impact on human behaviour and readiness for the changing climate (City of Toronto, 2018a). There is no recognition of the effects of climate change on the movements of flora and fauna. This is further reinforced by the absence of this point in the Pollinator Protection Strategy, Biodiversity Strategy, and Parkland Strategy.

Despite the lack of integration within the overall climate resiliency discussion, the emphasis on increased green infrastructure by the City of Toronto will simultaneously further connectivity nonetheless. The Toronto Green Standard includes a section on strategies for climate-positive landscapes, in which the reduction of lawn areas and expansion of meadows is encouraged. In Toronto's Official Plan,

Green Street Technical Guidelines, and bylaws there is an emphasis on stormwater mitigation and heat island reduction using green infrastructure. Given the ability for street plantings, such as bioswales, to contribute to these goals (Xiao et al., 2017; Balany et al., 2020) the increased landscape spaces will also increase stepping stones throughout the urban environment.

Collaboration

In the Official Plan of Toronto, the first principle is reconciliation. This principle is important as it recognizes the importance of creating and repairing meaningful relationships and to amplify Indigenous voices and values within the planning process. However, there are varied levels of how this was shown throughout the documents reviewed.

First, recognizing the legislative nature of municipal bylaws, collaboration with Indigenous communities was not apparent. Toronto's First Resilience Strategy reinforces the importance of incorporating Indigenous knowledge and values into the planning process. The Biodiversity Strategy and Parkland Strategy identify Indigenous knowledge carriers as key stakeholders.

While the Biodiversity Strategy states Indigenous knowledge carriers could contribute to best practices for biodiversity in the built environment, the Parkland Strategy focuses on Indigenous collaboration for place-making. Encouragingly, the Parkland Strategy is currently undergoing a revision process which includes an Indigenous advisory group. The Pollinator Protection Strategy identifies the importance of having an Indigenous advisory group to implement the strategy. However, when reviewing the TRCA Strategic Plan, Green Street Technical Guidelines, and Toronto Green Standards, it was unclear if engagement with Indigenous communities was conducted or utilized. Indigenous communities are missing from the Toronto Ravine Strategy while the TRCA, volunteer groups, and philanthropic groups are identified as potential partners.

Like the *Toronto Ravine Strategy*, collaboration with other stakeholders to achieve their goals is an important consideration in each strategy document. The *Toronto Ravine Strategy* uses the term community stewardship as an important principle. The City of Toronto identifies the TRCA as a key stakeholder when identifying future sites for conservation and linkages in the *Biodiversity Strategy* and property owners to encourage biodiverse

landscapes. Two strategies identified in the *Biodiversity Strategy* are to work with partners to incorporate biodiverse landscaping into the Toronto Urban Design Awards and to develop a toolkit for educating children. The *Pollinator Protection Strategy* identifies a full list of stakeholders that should be engaged, which was used to create the foreword for this report.

Incentives for Urban Connectivity

The documents reviewed showed a notable absence of incentive strategies to encourage further collaboration. The only incentive found was in the *Biodiversity Strategy,* and proposes incorporating biodiverse landscapes into the Toronto Urban Design Awards, recognizing efforts to integrate nature into the built environment. Based on our review of the City of Toronto's website, this has not been done; rather, the City created a separate category in the Garden Awards. The website review also clarified that the City does offer various incentives that indirectly support landscape and habitat connectivity. Grants are offered for green roofs, urban forestry, and pollinator habitats. For example, the PollinateTO grant provides up to $5,000 for community-led

projects that enhance pollinator habitats. The Urban Forestry Grant program allocates between $50,000 and $100,000 to institutions such as universities, schools, and hospitals. In contrast, grassroots neighbourhood groups can only access $500 through the same program. Additionally, development charge reductions and incentives of up to $100,000 are available for green roof installations, further promoting green infrastructure in the city.

Despite these programs, incentives for private homeowners to create biodiverse front- or backyards are notably absent. While property owners are identified as key stakeholders in enhancing biodiversity and landscape connectivity, they receive little financial support for retrofitting their landscapes compared to other sustainability initiatives. In fact, research by the Ecological Design Lab's Bylaws for Biodiversity project found that bylaw enforcement can actively discourage private homeowners from implementing biodiverse landscapes. This gap contrasts with the City's broader push for green infrastructure and presents a missed opportunity to incentivize biodiversity at the residential scale.

https://www.rewildingmag.com/rewilding-yard-not-illegal/

2.3 Priority Actions

Recognition of Landscape Connectivity

- Given that the *Parkland Strategy* is under review as of March 2025, this presents a strategic opportunity to submit feedback and advocate for a section on ecological integrity that includes landscape/habitat connectivity considerations. Examples of these policies can be found in *Breathe: Green Network Strategy* from the City of Edmonton.
- Advocate for expanding the *Pollinator Protection Strategy* to include all flora and fauna.

Climate Resilience

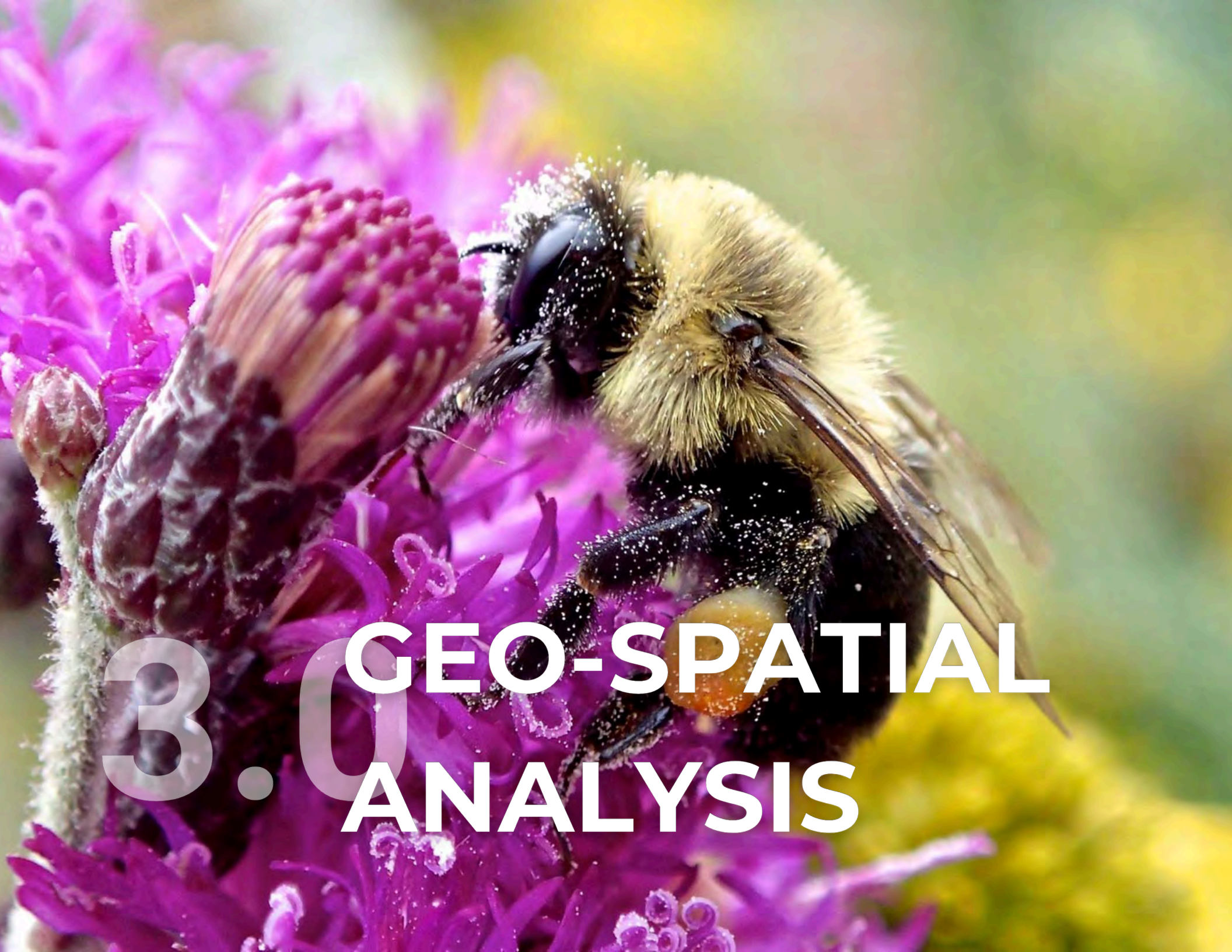
- Advocate for the inclusion of ecological resilience within the City of Toronto strategy documents, to account for shifting migrational patterns and movement of flora and fauna.
- Adopt a blue-green typology for green street guidelines. The *Green Street Guidelines* do not consider Toronto's historic water streams and floodplains but focus on green infrastructure selection. Adopting a blue-green typology will enhance water management and resilience.

Collaboration

- When the *Toronto Strategic Forest Management Plan* (which expired in 2022) and the *Biodiversity Strategy* start their revision, advocate for Indigenous Advisory Groups to be formed for the next versions.
- Encourage a higher level of engagement, from involvement to collaboration with Indigenous groups, private landowners, conservation groups, Landscape Ontario, and expert ecologists in revising strategies related to biodiversity, conservation, and connectivity in the urban environment.

Incentives for Urban Connectivity

- Advocate for increased grants for private residential homeowners to plant landscapes that encourage biodiversity. This step aligns with the values of resilience and stewardship of the City of Toronto.
- Continue encouraging educational opportunities for municipal enforcement and private residents to learn about naturalized spaces.



3.0 GEO-SPATIAL ANALYSIS

3.1 Method

The purpose of this mapping work is to support planners and decision-makers involved in regulating and managing land use by identifying areas with high potential for connectivity across Toronto's landscape. To achieve this, the project team began by mapping the city's existing green spaces, including parks, open spaces, and ravines. We then identified 26 types of green spaces with connectivity potential (hereafter referred to as "types"), which make up our Connectivity Catalogue. Datasets for five types from the Connectivity Catalogue were collected, and a geospatial analysis was conducted to understand how these types relate spatially to Toronto's existing green spaces.
Most of the spatial data was sourced from the City of Toronto's Open Data portal. This includes the following:

- Green Spaces: Any parks or open spaces in the City of Toronto (including hydro corridors).
- Ravine and Natural Feature Protection (RNFP) ByLaw: A dataset identifying areas protected under Toronto's RNFP Bylaw, which regulates activities like construction and tree removal in sensitive ecosystems.
- School Locations (All Types): Any school in the City of Toronto, regardless of public/private status or school board. These were recognized for their potential role in providing green space and offering educational opportunities related to environmental stewardship.
- Parks and Recreation Facilities: Some of these were located within or adjacent to green spaces. They were included due to their strong ties to community activity, significant outdoor recreational areas, and managed landscaping.
- PollinateTO Primary Project Garden Locations: A dataset mapping the locations of community-led pollinator gardens funded by the PollinateTO grants. These gardens could be on both public and private land.

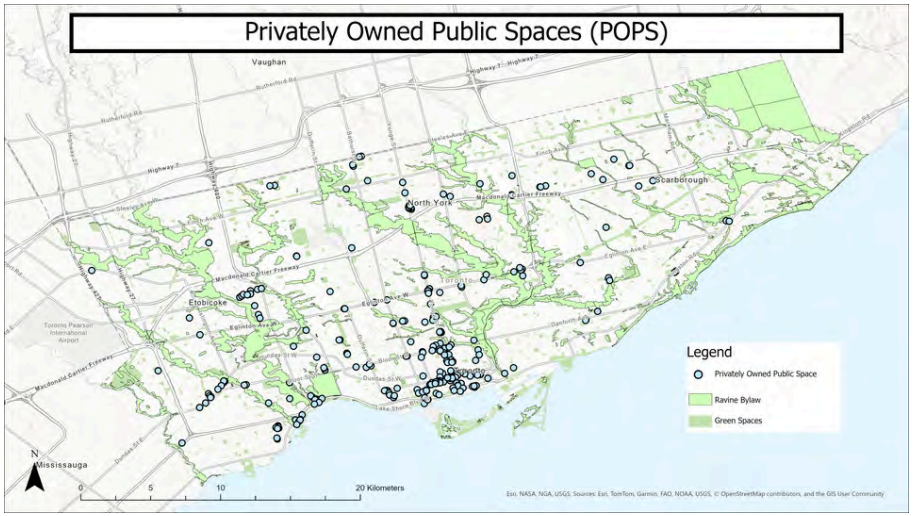
The City of Toronto's Open Data Portal served as a valuable resource for data collection, being the primary source for various datasets in formats such as shapefiles and CSVs. The majority of the listed datasets were available in shapefile format, allowing for straightforward integration into ArcGIS. These datasets included Parks and Open Spaces, Schools, and Community Centres, all shapefiles containing geographic and attribute data. However, the Building Permits – Green Roofs dataset was originally a CSV file listing green roof permit locations across the city. This was not provided as a shapefile and, as such, required geocoding to be visualized on a map. It is also important to note that the dataset includes both existing green roofs and approved green roofs as part of future developments. These features highlight the potential for vertical greening in the urban fabric.

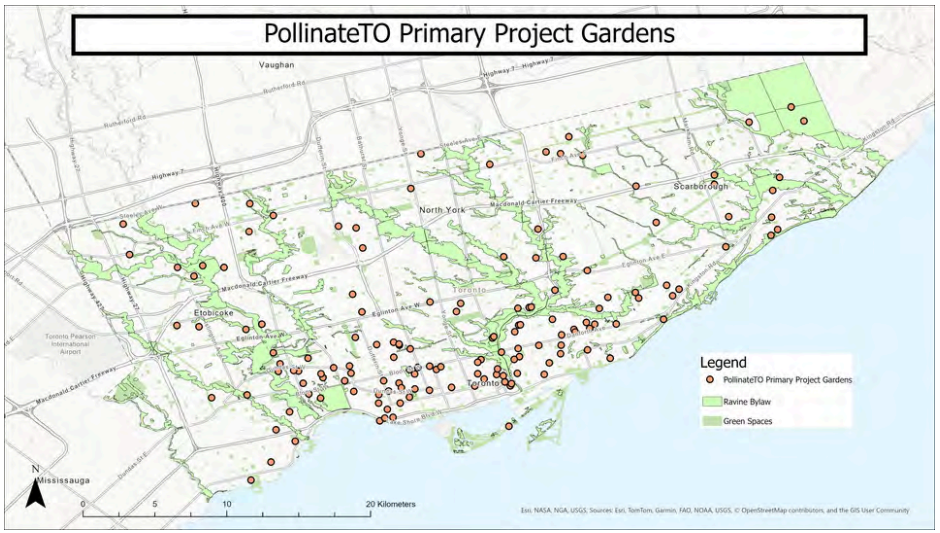
Another feature of interest to the project team was Privately-Owned Publicly-Accessible Spaces (POPS); however, this information was unavailable on the City's Open Data Portal. Instead, it was sourced from the City of Toronto's website, which provided an interactive map but not a downloadable dataset. Addresses were manually compiled into a CSV file and then geocoded for mapping purposes to make this information usable in a GIS environment.

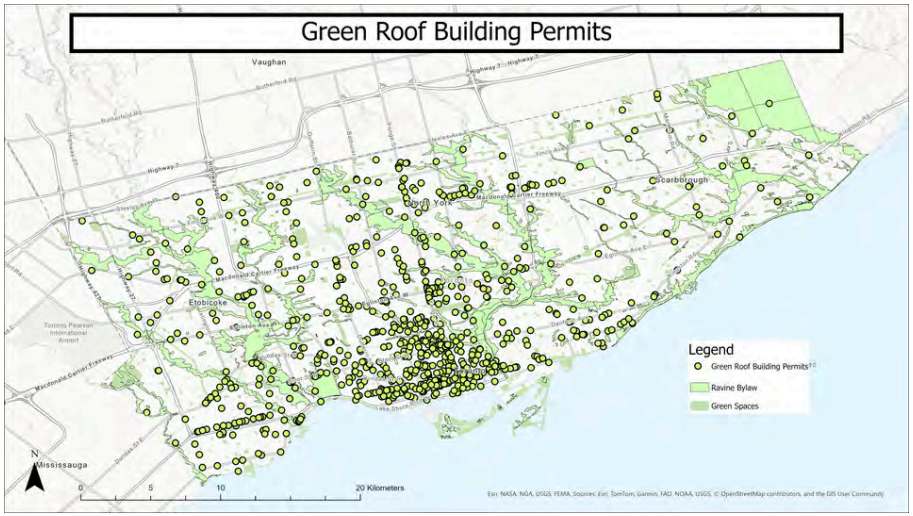
One of the key challenges in working with these datasets was the need for geocoding, particularly for the Green Roofs and POPS datasets. Because these were listed in CSV files with address-based locations rather than spatial coordinates, the project team had to build a custom geocoder using a basemap. This process involved parsing addresses, running them through the geocoder, and verifying results. Geocoding is a time-intensive task, especially when dealing with large datasets, and ensuring accuracy requires additional steps such as manually reviewing mismatches and refining address formatting.

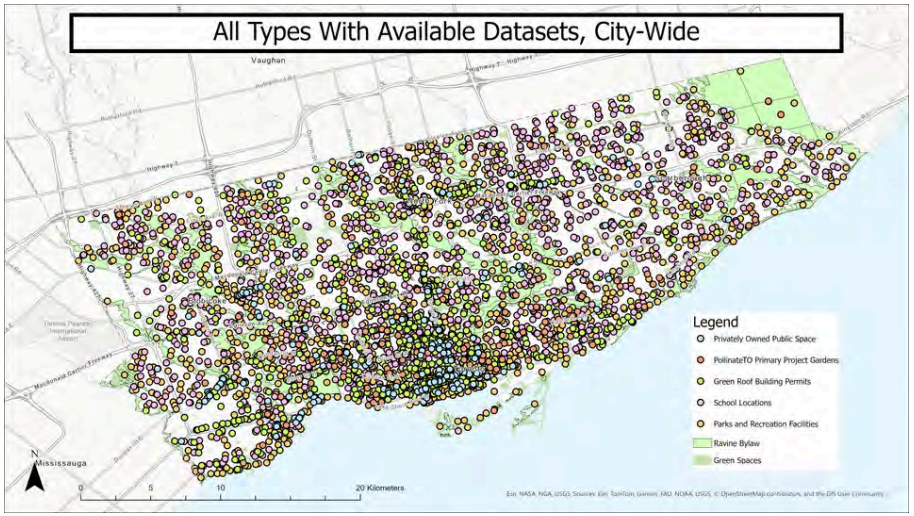
It is essential to acknowledge the limitations of this data collection process. Not all points were successfully geocoded—only about 75-80% of the Green Roofs and POPS datasets' locations were accurately placed. Additionally, specific datasets were more readily available in usable formats than others, requiring extra effort to transform data into a GIS-compatible structure.

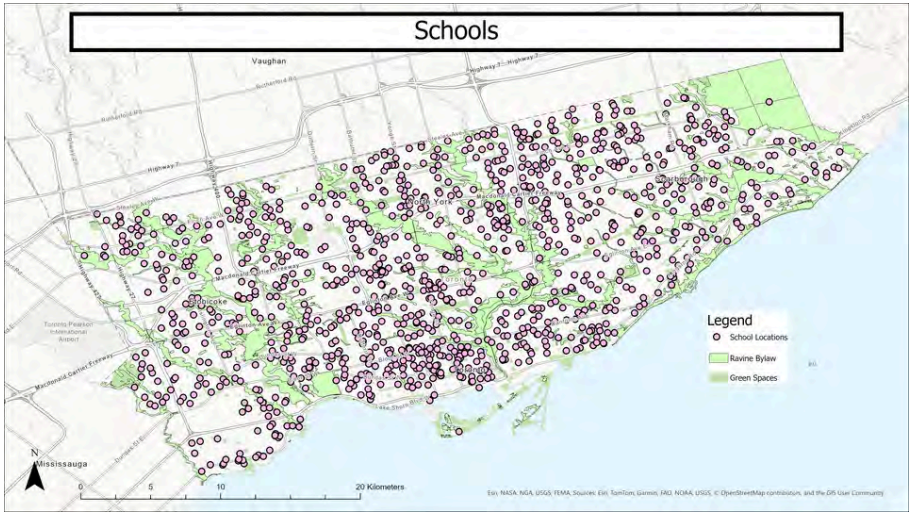
3.2 Map Analysis







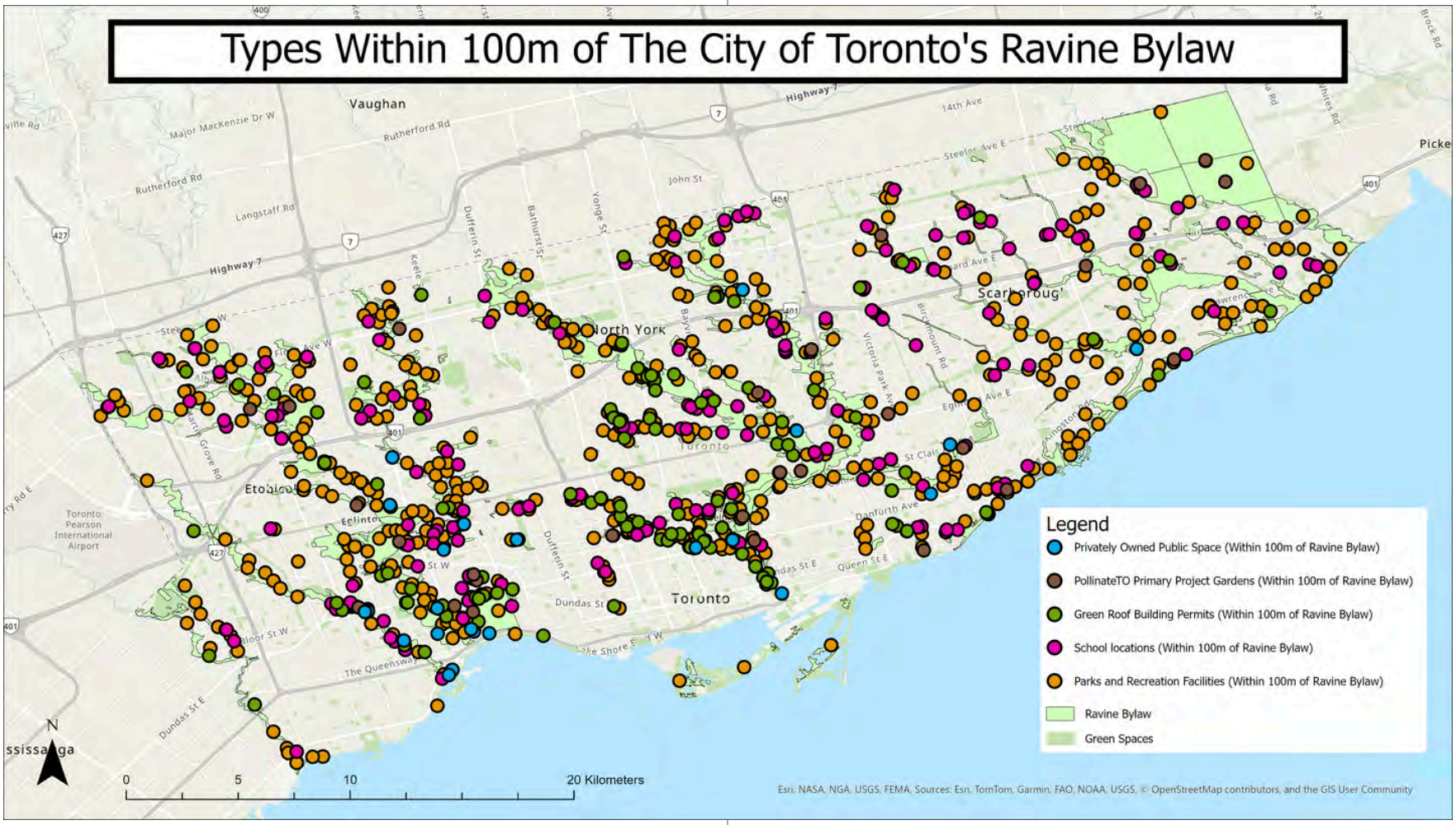




After plotting each dataset on a City of Toronto basemap in ArcGIS and overlaying the dataset for neighbourhood boundaries in the City, several analyses were run. First, using the RNFP Bylaw shapefile, a location analysis was conducted to determine all plotted types within 100 meters of the Ravine Bylaw area. This buffer zone was selected based on the TRCA's buffer zones for wildlife continuity.

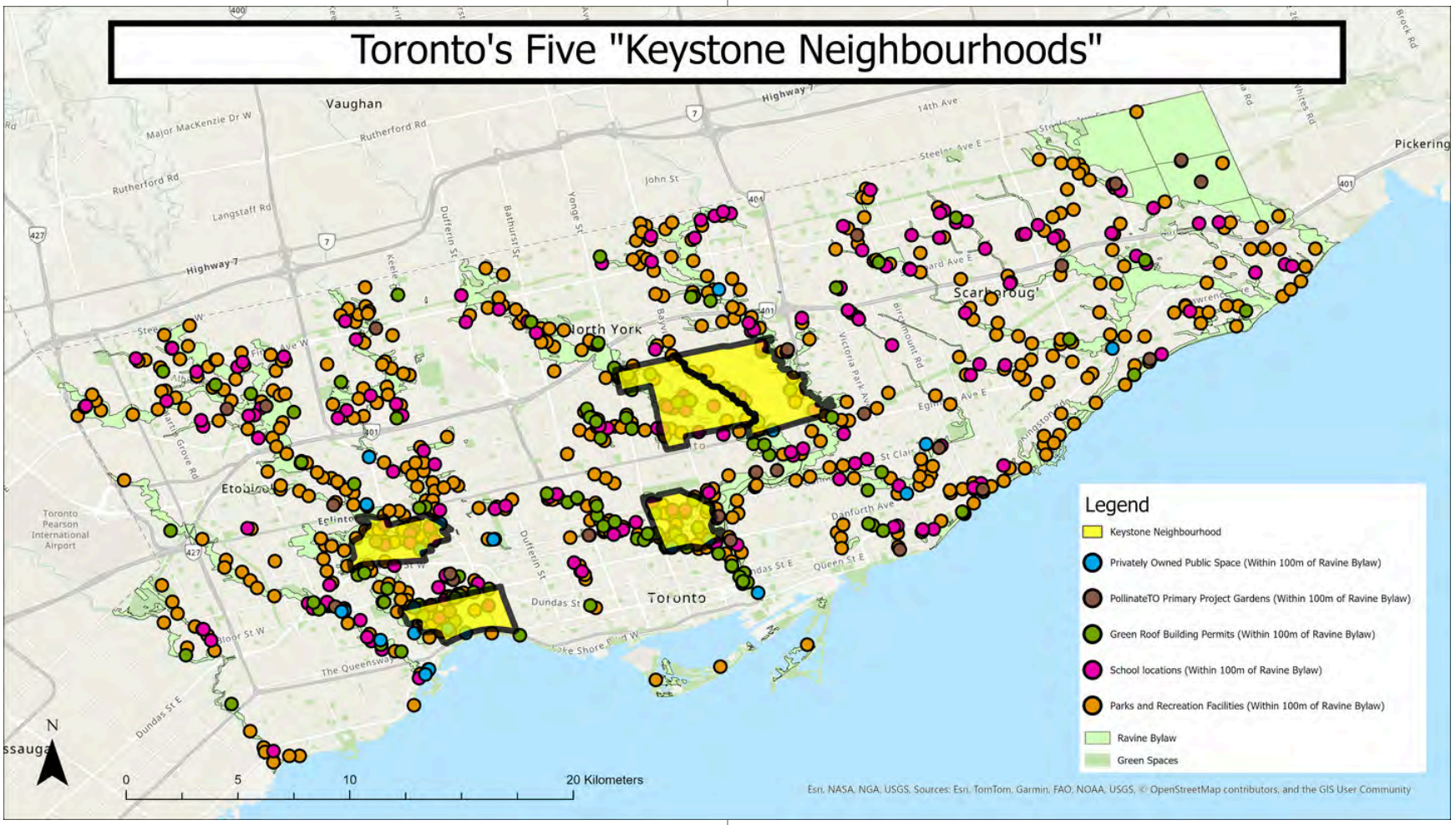
As seen in the comprehensive map, the resulting visualization is quite dense and complex, with features distributed throughout the city. While this might suggest that connectivity is possible in many areas, the goal was to identify and highlight the most assertive zones with the most significant potential for meaningful, connected green infrastructure. This refined focus allows planners to prioritize key areas for investment, policy development, or community engagement.

After all types were identified based on this catchment area, an analysis was run to determine how many of the plotted typologies appeared in each of the City of Toronto's Neighbourhoods.



3.2.1 Keystone Neighbourhoods

The following are the top 5 neighbourhoods that resulted from our analysis. The project team has designated these areas as “Keystone Neighbourhoods,” a term inspired by its ecological significance, reflecting the vital role these neighbourhoods play in the broader community ecosystem.



To gain a clearer understanding of the areas represented by data points, the group conducted site visits as a method of ground-truthing (see Appendix a). To ensure a diverse perspective for areas across the city, a range of neighbourhoods was selected for these visits. This included Rosedale, an affluent community, and Rockcliffe-Smyth, identified as a Neighbourhood Improvement Area (NIA) by the City of Toronto. In addition, the project team visited the Golfdale-Cedarbrae-Woburn neighbourhood. While this neighbourhood did not score particularly high in the analysis (38/158), it was a valuable location to investigate given the range of types present, as well as its proximity to The Meadoway, an east-west hydro corridor known for its rewilding and naturalization efforts. While hydro corridors are not included in the Ravine Bylaw, their potential for connectivity as greenways is strong. However, they are also not desirable infrastructure when considering real estate, and as a result, tend to pass through lower-income neighbourhoods.

It is also important to note that only one of the top five neighbourhoods is classified as an NIA. In contrast, neighbourhoods such as Rosedale-Moore Park and Bridle Path-Sunnybrook-York Mills are considered affluent neighbourhoods in the city. After completing this analysis, the data suggest that investment (both private and public) and affluence plays a role in a neighbourhood's connectivity potential.

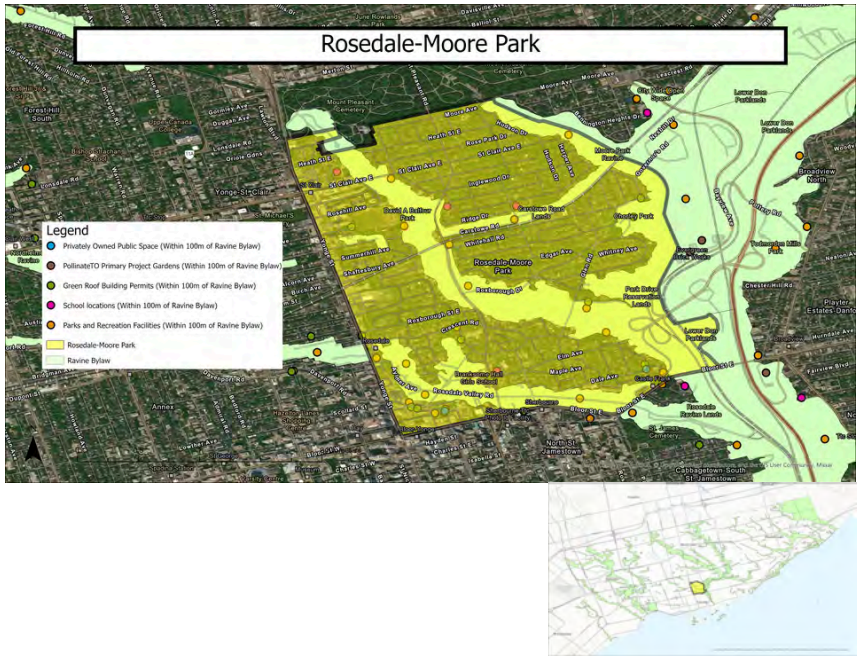
These neighbourhoods were selected based on their potential as identified in the group's analysis, but there were limitations to the process. It is important to note that the map may not always illustrate existing conditions. In addition, data points are not weighted—each point is treated equally, regardless of the size or specific features of the space. For instance, some schoolyards are entirely paved while others include significant amounts of greenspace. Pollinator gardens vary widely in size and composition, being on both private and public lands.

This pilot mapping exercise has underscored the need for a more comprehensive and refined mapping approach to accurately identify Keystone Neighbourhoods across the city.

3.2.2 Neighbourhood Descriptions

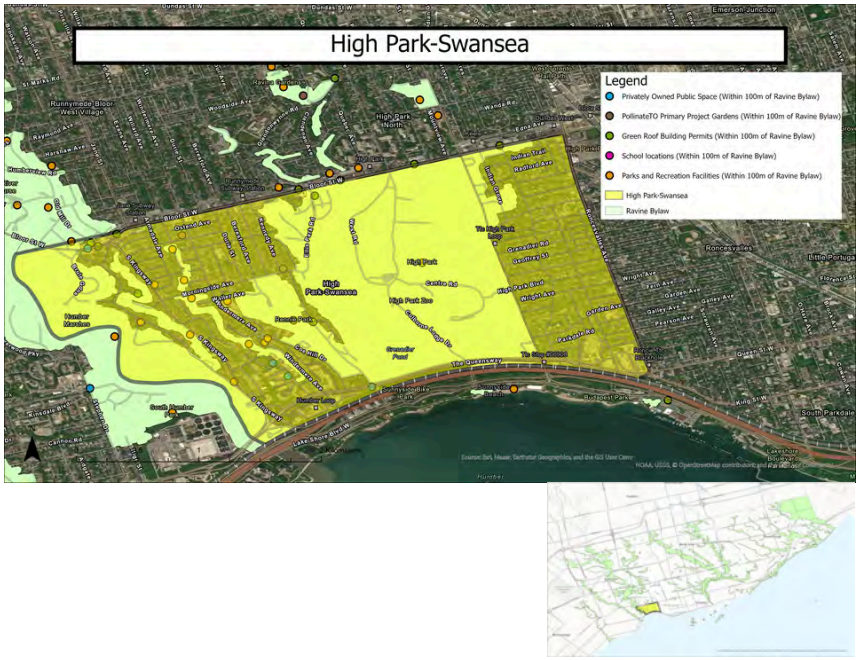
Rosedale-Moore Park

Rosedale-Moore Park is characterized by its natural ravine systems and mature urban tree canopy, providing significant ecological and recreational value within the central city. The neighbourhood features extensive green space connectivity, including Rosedale Ravine Lands and Park Drive Reservation Lands. Rosedale-Moore Park also includes several green roofs and POPS.



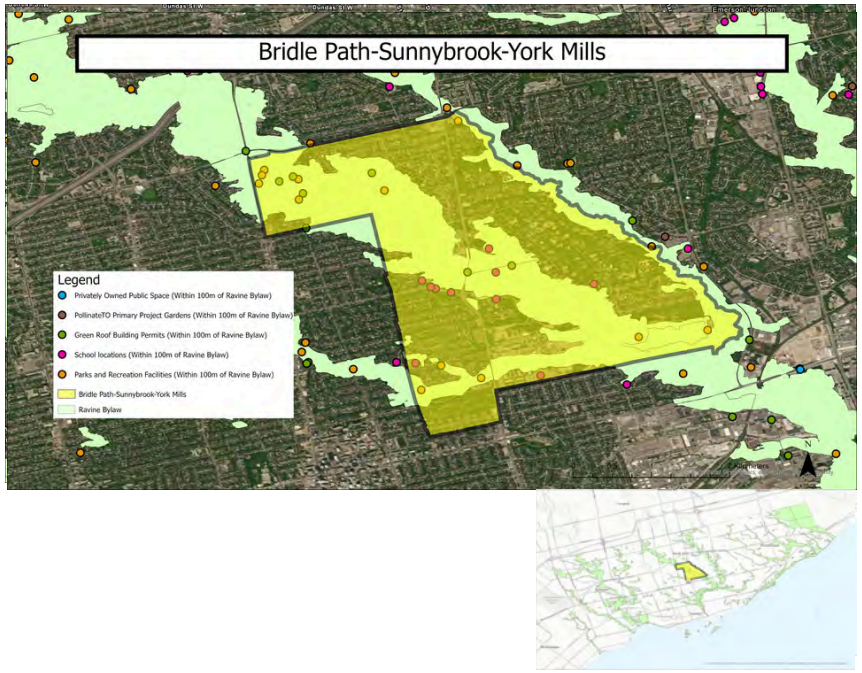
High Park-Swansea

Anchored by High Park, Toronto's largest municipal park, High Park-Swansea offers extensive green infrastructure including woodlands, wetlands, and recreational trails. The adjacency to Grenadier Pond and the Humber River further enhances its ecological corridor role and supports habitat connectivity within the urban landscape.



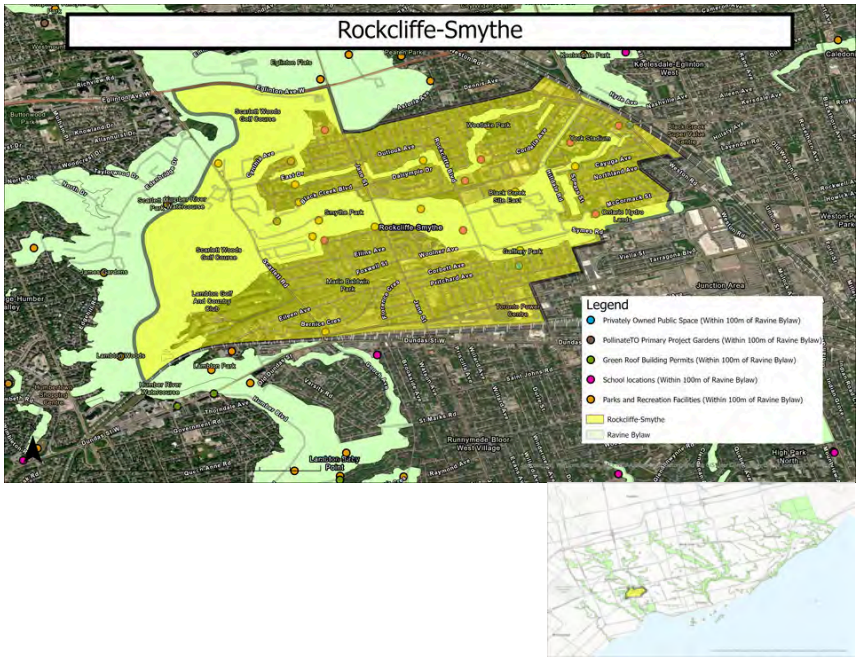
Bridle Path-Sunnybrook-York Mills

Bridle Path-Sunnybrook-York Mills features expansive private lots with mature vegetation alongside significant public green spaces such as Sunnybrook Park and Wilket Creek Park. The area's extensive park network and valleys provide critical green space, and several green roofs and schools are located throughout the community.



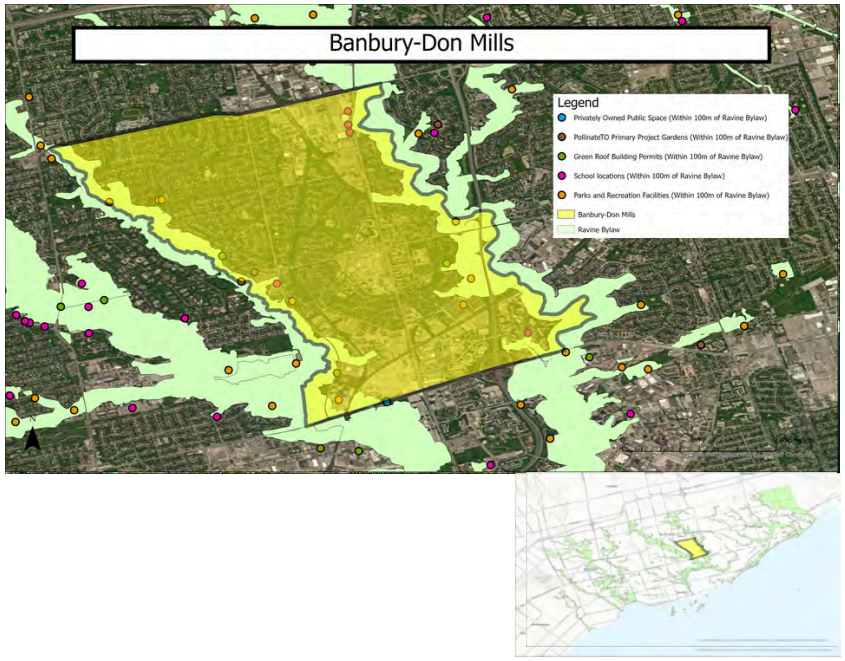
Rockcliffe-Smythe

Rockcliffe-Smythe is situated along the Humber River watershed and benefits from adjacency to major green assets such as Smythe Park and the Humber River. Recent enhancements to its parks and natural areas include improving stormwater management. This neighbourhood also includes a private pollinator garden.



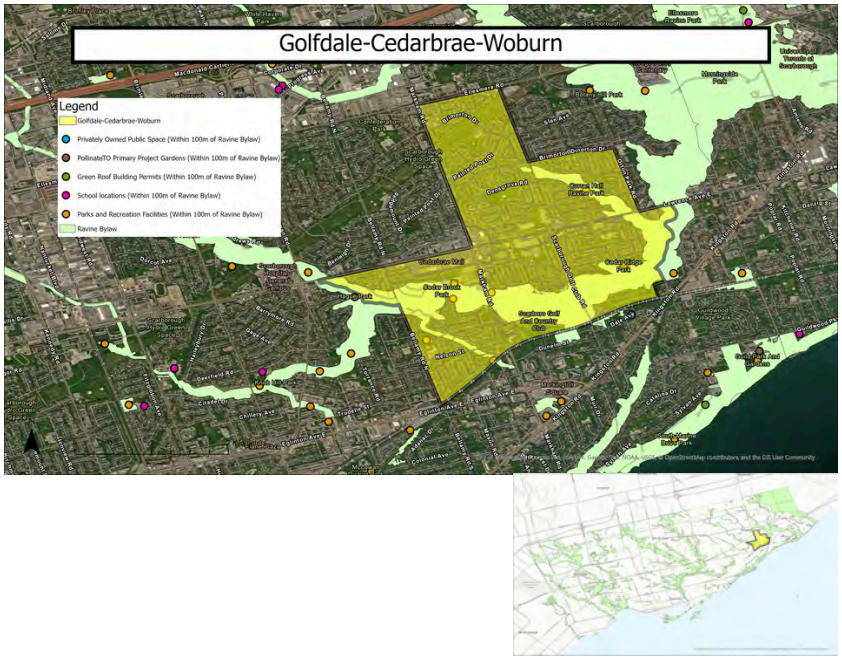
Banbury-Don Mills

Banbury-Don Mills integrates residential development with an extensive green space framework, including Edwards Gardens and the Don Valley ravine system. These natural features serve as key components of the city's ecological network.



Golfdale-Cedarbrae-Woburn

Golfdale-Cedarbrae-Woburn encompasses a range of green spaces, notably Cedar Brook Park and the Meadoway hydro corridor, providing critical natural connections in the eastern end of the city. The area's parklands support floodplain management and offer diverse recreational opportunities within a predominantly residential setting.



4.0 THE CATALOGUE

4.1 The Purpose

The purpose of this catalogue is to inform and inspire interest holders by showcasing the potential and implementation of green spaces in urban landscape connectivity. For each space, the catalogue highlights key challenges, opportunities, and recommendations. To inspire, this catalogue provides aspirational photos of how urban landscape connectivity can improve.

The first step in creating the catalogue was to identify the full range of green spaces in which urban landscape connectivity can occur. In total, twenty-six (26) spaces were identified using the literature review, policy scan, and team discussions. This list is not regarded as exhaustive, but a foundation for urban landscape connectivity possibilities.

4.2 List of Types

1. Private Residential Yards
2. Green Roofs
3. Parks and Parkettes
4. Recreation Centre Yards
5. Cemeteries
6. Golf Courses
7. Community Gardens
8. Vacant Lots
9. Residential Yards
10. Employment Yards
11. School Yards
12. Brownfields
13. Roundabouts
14. Street Plantings
15. Trails
16. Hydo Corridors
17. Railways
18. Natural Heritage Areas
19. Walkways
20. Plazas
21. POPS
22. Multi-unit Yards
23. Road Verges
24. Bioretention Assets
25. Alleyways
26. Land Use Conversions

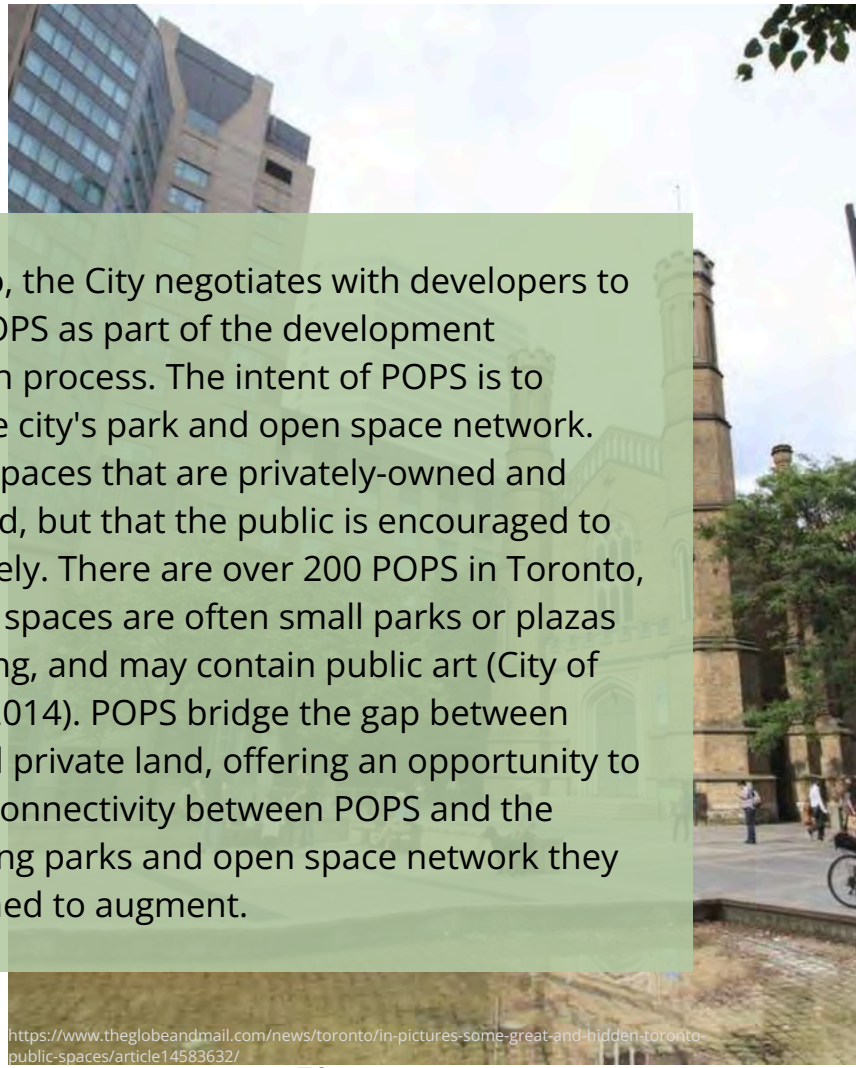
4.3 Chosen Types

Rationale

While many types of spaces have significant potential for urban landscape connectivity, including private residential yards, municipal boulevards, and decommissioned roads, we chose to highlight six spaces that present a balance between both private and publicly owned spaces. As a foundational catalogue, the spaces were selected to showcase the variety of urban landscape connectivity potential in small to large areas, as well as the variety of strategies that should be considered by various interest holders.

1. POPS
2. Green Roofs
3. Parks and Parkettes
4. Recreation Centre Yards
10. Hydo Corridors
16. Business Parks

4.3.1 PRIVATELY-OWNED PUBLICLY ACCESSIBLE SPACES (POPS)



https://www.theglobeandmail.com/news/toronto/in-pictures-some-great-and-hidden-toronto-public-spaces/article14583632/

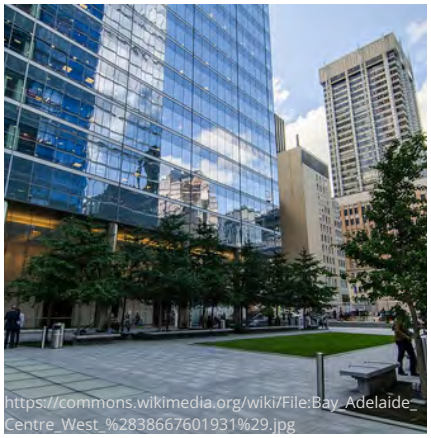
In Toronto, the City negotiates with developers to include POPS as part of the development application process. The intent of POPS is to extend the city's park and open space network. They are spaces that are privately-owned and maintained, but that the public is encouraged to access freely. There are over 200 POPS in Toronto, and these spaces are often small parks or plazas with seating, and may contain public art (City of Toronto, 2014). POPS bridge the gap between public and private land, offering an opportunity to enhance connectivity between POPS and the surrounding parks and open space network they are designed to augment.

Toronto/GTA POPS

https://urbantoronto.ca/news/2014/08/torontos-first-public-plaque-unveiled-concord-cityplace,10363

ICEBOAT TERRACE, CITY PLACE

Iceboat Terrace is a street in Toronto's CityPlace neighbourhood. In July 2014, Iceboat Terrace became the first location in Toronto to receive a plaque marking it as a POPS, indicating its public accessibility and the applicable bylaws.



https://commons.wikimedia.org/wiki/File:Bay_Adelaide_Centre_West_%28386676019 31%29.jpg

ARNELL PLAZA
BAY-ADELAIDE CENTRE

Arnell Plaza offers a landscaped open space that serves as a pedestrian thoroughfare. Its design facilitates connectivity between Bay Street and Yonge Street, improving pedestrian flow and accessibility in the Financial District.

https://www.nakdesignstrategies.com/projects/maple-leaf-square/

MAPLE LEAF PLAZA, YORK ST.

The public plaza at Maple Leaf Square functions as a POPS situated adjacent to Scotiabank Arena. The complex encompasses 1.8 million square feet over a just under 1 hectare city block with mixed-use development.

Barriers

- **Conventional Design:** Currently, the Urban Design Guidelines emphasize aesthetics and human accessibility without consideration for biodiversity
- **Heritage and/or Cultural Designations:** POPS located on or adjacent to heritage or cultural sites may present further limitations to design

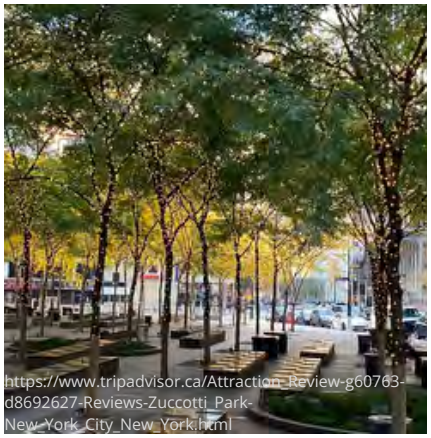
Opportunities

- **Update the Urban Design Guidelines:** The Urban Design Guidelines for POPS should include considerations for native plants, stratified layers, pollinator gardens, and urban agriculture where possible. These updates can still be consistent with maintaining an aesthetic value. Adopting a blue-green typology into POPS could enhance stormwater mitigation.
- **Include POPS guidelines in Secondary Plans Secondary Plans:** can present design guidelines that are binding and build consistency and greater connectivity across the whole neighbourhood
- **Increased Awareness:** As more naturalization is incorporated into the urban environment, the awareness and importance of these spaces will increase. In turn, this could lead to increased support and adoption in other urban spaces.

Case Studies

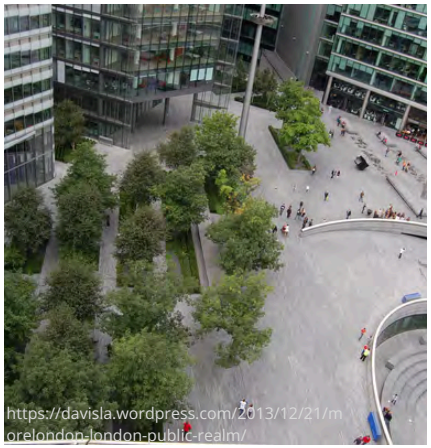
CORE CITY PARK
DETROIT, USA.

This park is a POPS located in Detroit's Core City neighbourhood. The project transformed a former asphalt parking lot into a 10,000 square foot public space featuring 110 newly planted trees.



ZUCCOTTI PARK
NEW YORK CITY, USA.

Zuccotti Park, formerly known as Liberty Plaza Park, is a 33,000-square-foot publicly-accessible park located in New York City's Financial District.



MORE LONDON
LONDON, UK.

More London is a significant mixed-use development located on the south bank of the River Thames, between London Bridge and Tower Bridge. Spanning approximately 5 hectares, this development has transformed a former brownfield site into a vibrant business and cultural hub.

4.3.2 GREEN ROOFS

Toronto adopted its Green Roof Bylaw in 2009, making it the first city in North America to adopt a bylaw that requires the construction of green roofs for new developments. The bylaw requires green roofs for new developments and additions of over 2,000 square metres gross floor area (City of Toronto, 2009). The Toronto Green Roof Construction Standard: Supplementary Guidelines (2012) and Guidelines for Biodiverse Green Roofs (2013) both encourage the use of native plants on green roofs to promote biodiversity. Toronto's green roofs comprise a significant area of potential habitat for wildlife, particularly as stepping stones for flying animals.

Toronto/GTA Green Roofs

https://zinco-greenroof.com/references/rbc-waterpark-place-toronto

RBC WATERPARK PLACE TORONTO, ON.

Completed in 2009, the RBC Waterpark Place green roof was one of the largest of its kind in the city at the time. It spans over 60,000 square feet and serves as a model for urban environmental design.

https://strata.ca/toronto/120-bayview-ave-canary-park

CANARY PARK, CORKTOWN, TORONTO

The Canary Park green roof was installed as part of the Canary District development, a large urban renewal project that transformed a former industrial site into a vibrant, mixed-use community.

https://www.greenroofs.com/projects/humber-river-hospital/

HUMBER RIVER HOSPITAL TORONTO, ON.

Humber River Hospital in Toronto features one of Canada's largest green roofs, spanning approximately 48,000 square feet. Completed in 2015, the green roof is part of the hospital's commitment to sustainability and environmental responsibility.

Barriers

- **Logistics Green:** roofs are more challenging to implement than standard roofs due to design, construction, and maintenance.
- **Municipal Bylaw:** Currently, developers are required to cover 20-60% of the roof within three years of construction depending on the size of the building. There are no requirements for the use of native plants on green roofs. Additionally, developers can opt for cash-in-lieu.

Opportunities

- **Update Municipal Bylaw:** The green roof bylaw should be updated to include requirements for native plants.
- **Include Green Roofs in Toronto Urban Design Awards:** Including green roofs as a category will inspire landscape architects and designers to consider the benefits of green roofs, especially in residential buildings as an amenity space.

Case Studies


https://www.greenroots.com/projects/native-child-and-family-services-of-toronto-ngaa

NATIVE CHILD AND FAMILY SERVICES TORONTO, ON.

The building is used for a wide range of activities including: public assemblies, ceremonies, drumming, and circle sessions. It includes a sacred medicine garden and Three Sisters garden, and promotes locally-grown ceremonial, medicinal, and agricultural crops.


https://commons.wikimedia.org/wiki/File:Toronto_City_Hall_Podium_green_roof_by_LiveRoof_July 2010.jpg

CITY HALL PODIUM TORONTO, ON.

Completed in 2006, is one of the city's most notable examples of urban green infrastructure. Located atop the Toronto City Hall podium, this green roof spans approximately 3,000 square meters and serves both aesthetic and environmental purposes.

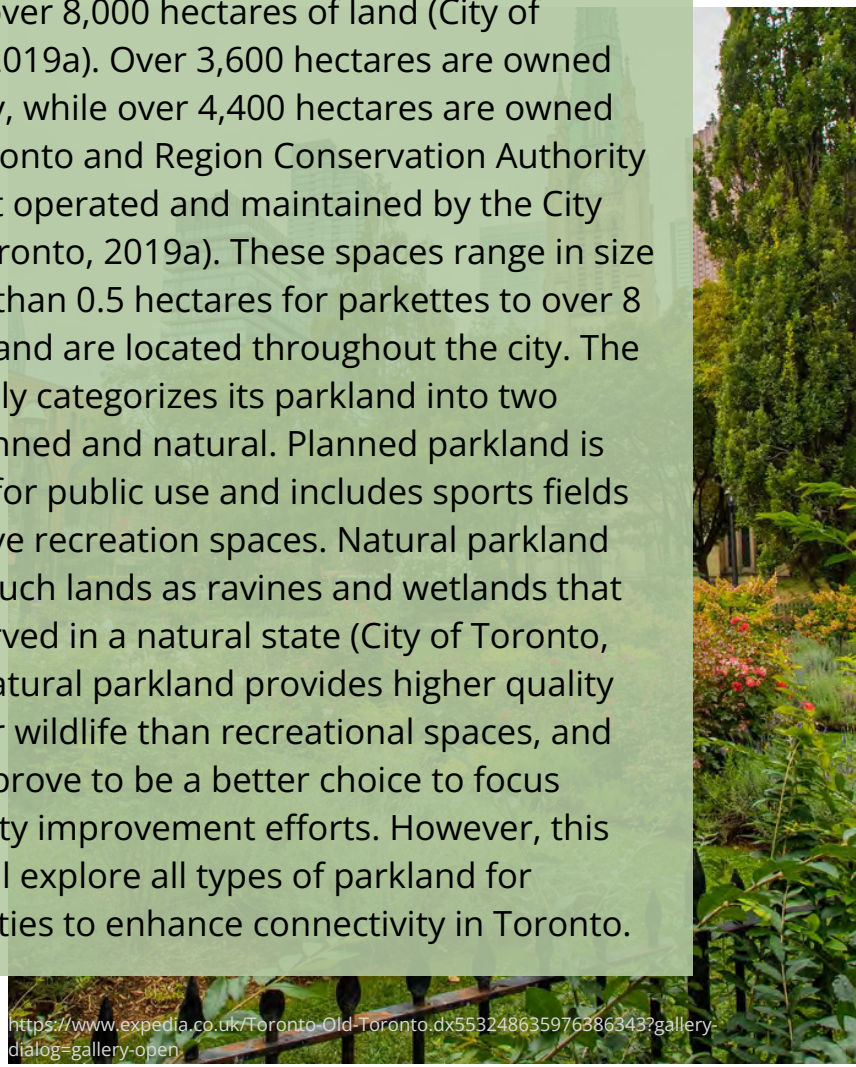

https://livingarchitectureformonitor.com/articles/rooftop-farm-living-lab-research-tmu-sp23

TMU ROOFTOP URBAN FARM TORONTO, ON.

This green roof was designed to promote environmental education, sustainability, and energy efficiency. It integrates native plants and vegetation to help manage stormwater, reduce the urban heat island effect, and provide insulation to the building.

4.3.3 PARKS AND PARKETTES

Toronto has more than 1,500 parks and parkettes covering over 8,000 hectares of land (City of Toronto, 2019a). Over 3,600 hectares are owned by the City, while over 4,400 hectares are owned by the Toronto and Region Conservation Authority (TRCA) but operated and maintained by the City (City of Toronto, 2019a). These spaces range in size from less than 0.5 hectares for parkettes to over 8 hectares, and are located throughout the city. The City broadly categorizes its parkland into two types: planned and natural. Planned parkland is designed for public use and includes sports fields and passive recreation spaces. Natural parkland contains such lands as ravines and wetlands that are preserved in a natural state (City of Toronto, 2019a). Natural parkland provides higher quality habitat for wildlife than recreational spaces, and so it may prove to be a better choice to focus connectivity improvement efforts. However, this project will explore all types of parkland for opportunities to enhance connectivity in Toronto.


https://www.expedia.co.uk/Toronto-Old-Toronto.dx5532486359763863 43?gallery-dialog=gallery-open

Toronto/GTA Parks and Parkettes

https://www.toronto.ca/explore-enjoy/parks-recreation/places-spaces/parks-and-recreation-facilities/location/?id=241

TRINITY BELLWOODS PARK, TORONTO, ON.

Trinity Bellwoods is a public park located in the west end of Toronto, bounded by Queen Street West to the north, Dundas Street West to the south, and Strachan Avenue to the east.

https://traveltorontonow.blogspot.com/2014/08/dufferin-grove-park-soccer-field-picture.html

DUFFERIN GROVE PARK TORONTO, ON.

Dufferin Grove Park is a well-known public park located in the west end of Toronto. Originally, the park served as a simple recreation area, but over the years it has evolved into a vibrant community hub.

https://en.wikipedia.org/wiki/Riverdale_Park_%28Toronto%29#/media/File:Riverdale_Park_and_Toronto_Skyline,_July_2024.jpg

RIVERDALE PARK TORONTO, ON.

Riverdale Park is a large urban park located in the Riverdale neighbourhood of Toronto, offering a mix of green spaces, sports facilities, and recreational areas. It stretches along the Don River and is known for its scenic views of the city skyline.

Barriers

- **Integrated Design:** While many parks have intrinsic connectivity potential, integrating with other green spaces including residential yards, street plantings, and boulevards should be further considered.
- **Competing Uses:** Parks have many competing opportunities for land use placing a burden on naturalized areas.

Opportunities

- **Increase Strategic Areas of Naturalization:** Parks and Recreation staff should consider increasing strategic areas to renaturalize, such as the perimeter and tree buffer zones.
- **Expand the Community Stewardship Program to Urban Parks:** The City of Toronto could expand the community stewardship program to more urban parks through adoption programs. Similar to “Adopt-a-Highway” by the Province of Ontario, volunteer groups can adopt a park, increasing educational and stewardship opportunities.
- **Update the Parkland, Biodiversity and Pollinator Protection Strategy:** The Parkland, Biodiversity, and Pollinator Protection strategies should be updated to include considerations for ecological integrity and connectivity for all forms of flora and fauna.

Case Studies


https://www.cbc.ca/news/canada/toronto/high-park-, cars-1.6787470

HIGH PARK
TORONTO, ON.

High Park is a large urban park located in the west end of Toronto, covering 162 hectares of green space. Over the years, High Park has evolved into one of Toronto's most beloved recreational areas, offering a mix of natural woodlands, manicured gardens, ponds, and walking trails.

f.org/landscapes/evergreen-brick-works

EVERGREEN BRICKWORKS
TORONTO, ON.

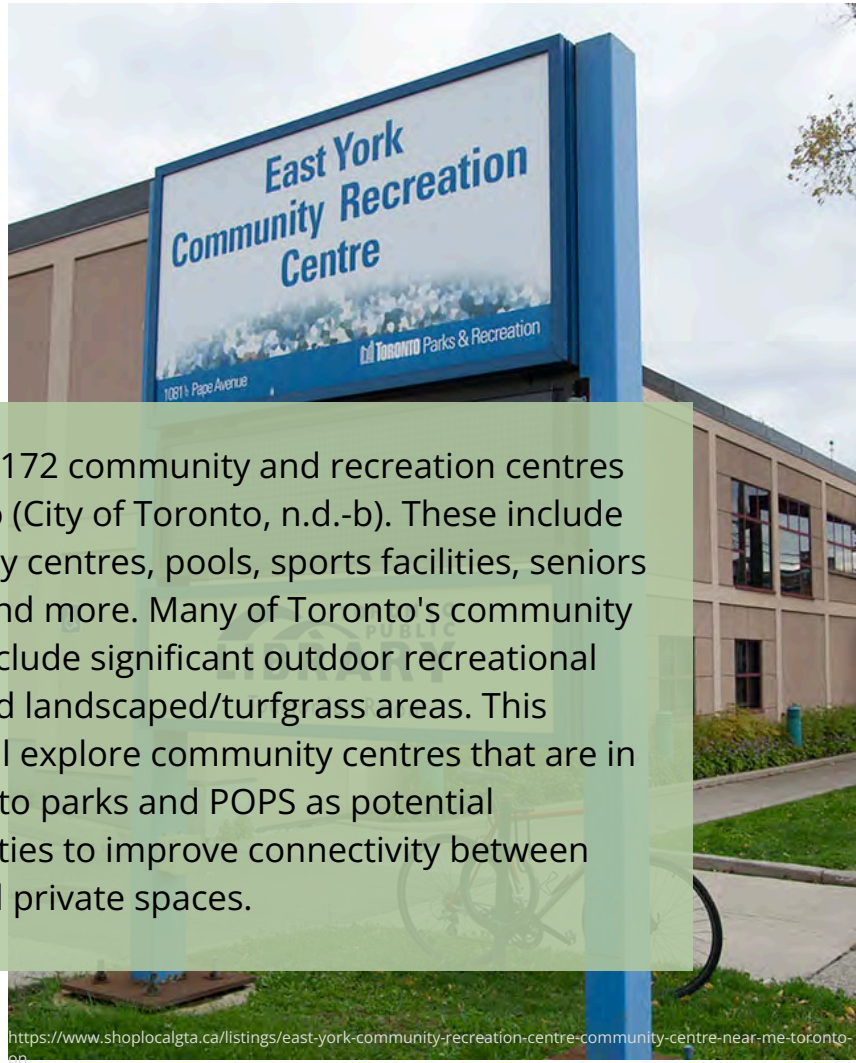
The revitalized space serves as a centre for environmental education, and focuses on green design, urban gardening, and community engagement. It features a public market, outdoor trails, and cultural events, blending its industrial heritage.


https://greenlandswallace.com/wp/project/corktown-common/

CORKTOWN COMMON PARK
TORONTO, ON.

Corktown Common is a 7.3-hectare public park, within the emerging neighbourhood of the West Don Lands. The park was officially opened in 2013 and is part of a larger revitalization effort to transform the area, which was once an industrial site, into a vibrant, sustainable community.

4.3.4 RECREATION CENTRES



https://www.shoplocalgta.ca/listings/east-york-community-recreation-centre-community-centre-near-me-toronto-

There are 172 community and recreation centres in Toronto (City of Toronto, n.d.-b). These include community centres, pools, sports facilities, seniors centres, and more. Many of Toronto's community centres include significant outdoor recreational spaces and landscaped/turfgrass areas. This project will explore community centres that are in proximity to parks and POPS as potential opportunities to improve connectivity between public and private spaces.

Toronto/GTA Recreational Centres

https://urbantoronto.ca/database/projects/york-recreation-centre.16937

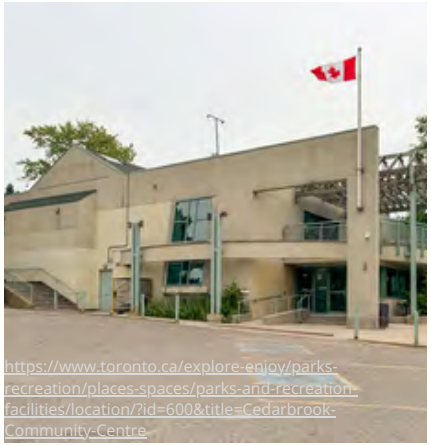
YORK RECREATIONAL CENTRE
TORONTO, ON.

The York Recreation Centre is a community facility offering a wide range of recreational services and programs. Over the years, the centre has undergone renovations and updates to accommodate the growing and diverse needs of the neighbourhood.

https://www.toronto.ca/explore-enjoy/parks-recreation/places-spaces/parks-and-recreation-facilities/location/?id=189

NORTH TORONTO MEMORIAL COMMUNITY CENTRE
TORONTO, ON.

The centre was designed to provide a range of recreational, cultural, and social services to the local community. Over the years, the centre has served as a hub for various programs, and remains an important gathering place for residents in the area.



https://www.toronto.ca/explore-enjoy/parks-recreation/places-spaces/parks-and-recreation-facilities/location/?id=600&title=Cedarbrook-Community-Centre

CEDARBROOK COMMUNITY CENTRE
TORONTO, ON.

Cedarbrook Community Centre is located in the Golfdale-Cedarbrae-Woburn neighbourhood of Toronto and offers a variety of programs for people of all ages.

Barriers

- **Integrated Design:** While recreation centres in the City of Toronto have increased naturalization efforts, integrating with other green spaces including residential yards, street plantings, and boulevards should be further considered.
- **Budget and Land Use Constraints:** Recreation centres may have larger budgetary constraints due to the variety of community services provided. Similar to parks, outdoor recreation spaces have competing opportunities for land use placing a burden on naturalized areas.

Opportunities

- **Education and Outreach:** Community recreation centres have a strong potential for educating and promoting naturalization in other green spaces. As a central meeting point for the public, they offer opportunities for displays, hands-on learning, public forums, workshops, etc. For example, families and children can learn about the differences of native vs. invasive species or learn how to naturalize their yards.
- **Increase Strategic Areas of Naturalization:** Parks and Recreation staff should consider increasing strategic areas to renaturalize, such as the perimeter and tree buffer zones.

Case Studies


https://grownative.org/project/watershed-center-rain-garden/

WATERSHED CENTRE RAIN GARDEN MISSOURI, USA.

Designed to showcase the benefits of using natural systems to manage runoff, improve water quality, and reduce flooding. Now, the garden has become a hands-on learning space, where local residents, students, and visitors


https://perkinswill.com/project/carrville-community-centre-library-and-district-park/

CARRVILLE COMMUNITY CENTRE VAUGHAN, ON.

Includes naturalized zones inspired by the vegetation of the adjacent valley land and the Oak Ridges Moraine. Along the east edge of the site, these zones are articulated as finger line extensions of the valley lands that project into the parkland

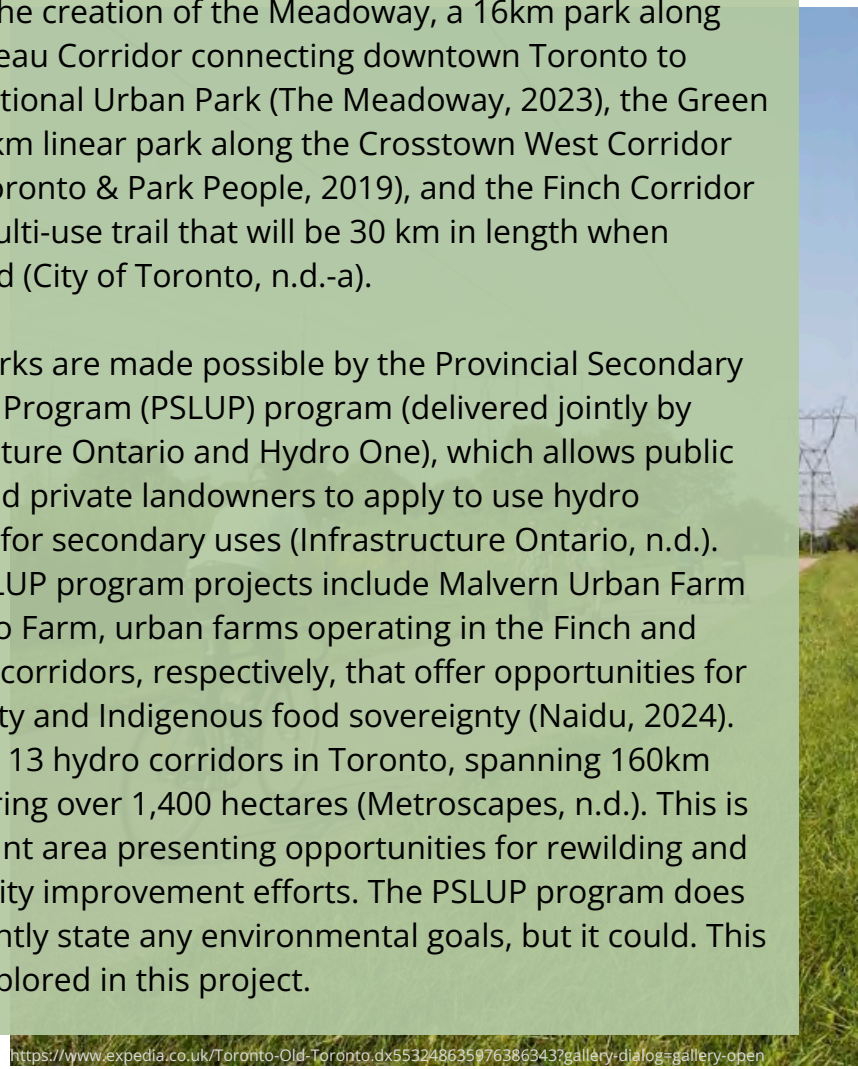
JOHN INNES COMMUNITY CENTRE TORONTO, ON.

Provides a wide range of recreational programs and services for residents, including fitness classes, sports leagues, and community events. It also serves as a hub for social gatherings and local initiatives, fostering community engagement and well-being.

4.3.5 HYDRO CORRIDORS

Hydro corridors are large, linear areas of land containing hydroelectric towers. As they are, hydro corridors act as animal movement corridors (Government of Ontario, 2024). However, they can be enhanced to provide higher quality habitat for plants and wildlife as well as recreational space for people. This opportunity is already being explored through the creation of the Meadoway, a 16km park along the Gatineau Corridor connecting downtown Toronto to Rouge National Urban Park (The Meadoway, 2023), the Green Line, a 5 km linear park along the Crosstown West Corridor (City of Toronto & Park People, 2019), and the Finch Corridor Trail, a multi-use trail that will be 30 km in length when completed (City of Toronto, n.d.-a).

These parks are made possible by the Provincial Secondary Land Use Program (PSLUP) program (delivered jointly by Infrastructure Ontario and Hydro One), which allows public bodies and private landowners to apply to use hydro corridors for secondary uses (Infrastructure Ontario, n.d.). Other PSLUP program projects include Malvern Urban Farm and Flemo Farm, urban farms operating in the Finch and Gatineau corridors, respectively, that offer opportunities for community and Indigenous food sovereignty (Naidu, 2024). There are 13 hydro corridors in Toronto, spanning 160km and covering over 1,400 hectares (Metroscapes, n.d.). This is a significant area presenting opportunities for rewilding and connectivity improvement efforts. The PSLUP program does not currently state any environmental goals, but it could. This will be explored in this project.

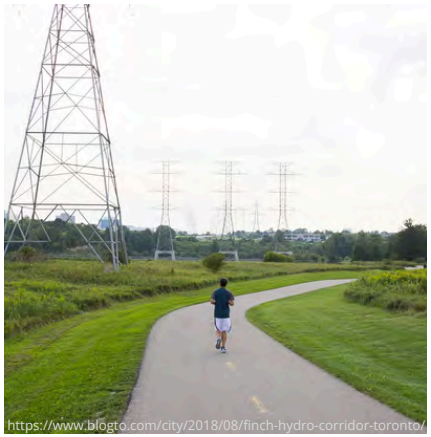

https://www.expedia.co.uk/Toronto-Old-Toronto.dx553248635976386343?gallery-dialog=gallery-open

Toronto/GTA Hydro Corridors


https://vaidedge.com/2011/11/09/gatineau-hydro-corridor/

GATINEAU HYDRO CORRIDOR ETOBICOKE, ON.

The Gatineau Hydro Corridor known for its role as a transmission corridor for electrical infrastructure. Located in the city's western part, it stretches across several neighbourhoods, including the area near the communities of West Humber and Etobicoke.


https://www.blogto.com/city/2018/08/finch-hydro-corridor-toronto/

FINCH HYDRO CORRIDOR TORONTO, ON.

The Finch Hydro Corridor is a major green space and utility corridor running across the northern part of Toronto, primarily stretching along Finch Avenue West. Historically, it was established as a utility corridor to house high-voltage power lines that provide electricity to the city.


https://www.toronto.ca/community-people/get-involved/public-consultations/infrastructure-projects/complete-street-multi-use-trail-feasibility-studies/etobicoke-hydro-corridor-multi-use-trail-feasibility-study/

ETOBICOKE HYDRO CORRIDOR TORONTO, ON.

The Etobicoke Hydro Corridor stretches from the southern part of the city near Lake Ontario to the northern areas of Etobicoke. The land is characterized by a mix of open fields, wooded areas, and wetlands which have become a habitat for wildlife and a valuable recreational area for local residents.

Barriers

- **Continuity:** While hydro corridors have strong intrinsic landscape connectivity, hydro corridors within urban areas intersect with roads. This reduces the functionality of the corridor for smaller animals and plants.
- **Collaboration:** Redeveloping a hydro corridor as a place for humans, flora, and fauna to share requires a collaborative effort to design and cultivate the space.
- **Budget Constraints:** In a similar fashion, redeveloping hydro corridors into activated spaces requires large capital investments.
- **Regulatory Constraints:** Hydro One has strict regulations for hydro corridors which includes maintaining clearance from hydro wires, restricting certain types of vegetation, and prohibiting structures that would impede transmission towers (Hydro One, 2024). This limits the overall habitat potential.

Opportunities

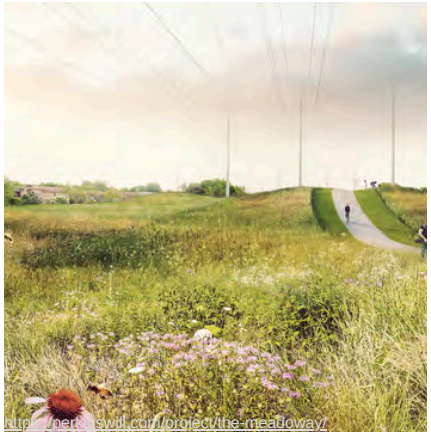
- **Urban Eco-passages:** To reduce the continuity barriers, a design competition could be used to consider urban eco-passages.
- **Neighbourhood Rejuvenation and Activation:** By developing a hydro corridor to link communities, the investment in the green space will encourage neighbourhood rejuvenation, presenting investment and community engagement opportunities. Neighbourhood groups can participate in the stewardship and fundraising of these projects.
- **Increasing Native Plant Diversity:** As hydro corridors are redeveloped, areas that have been clear-cut or lack diverse plant species can be cultivated to increase plant diversity, enhancing habitat and connectivity potential.

Case Studies

https://perkinswill.com/project/the-meadow/

THE MEADOWAY
TORONTO, ON.

The Meadoway is an ambitious urban greening project in Toronto that transformed a 16-kilometer stretch of abandoned hydro corridor into a vibrant green space. Work on The Meadoway began in the early 2010s, with the first phase of the project completed in 2020, creating a naturalized corridor that connects neighbourhoods, parks, and public spaces across the city. The vision for The Meadoway includes not only beautifying the landscape but also addressing environmental issues such as stormwater management and providing habitats for wildlife.



https://perkinswill.com/project/the-meadoway/

https://perkinswill.com/project/the-meadoway/

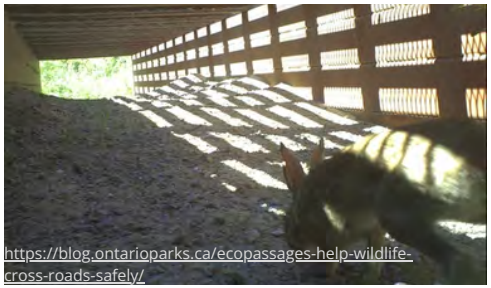
PROPOSED GREEN LINE
TORONTO, ON.

The project envisions a series of parks, pathways, and naturalized areas that connect downtown Toronto with surrounding neighbourhoods, fostering greater ecological health and improving quality of life for residents.

Source: DTAH. (2019). Green Line Implementation Plan.

This map from the Green Line Implementation Plan by DTAH clearly shows how corridors intersect with roads, causing barriers for small animals to cross.

The eco-passages illustrated below are connectivity measures that should be incorporated into hydro corridor redevelopment projects.



https://blog.ontarioparks.ca/ecopassages-help-wildlife-cross-roads-safely/

Hare crossing through eco passage in Ontario

https://www.facebook.com/ParksCanada/posts/these-new-small-eco-passages-in-bruce-peninsula-national-park-and-fathom-five-na/1486674708415806/

Eco passage under Emmett Lake Road in Bruce Peninsula National Park

4.3.6 BUSINESS PARKS

https://urbantoronto.ca/forum/threads/toronto-james-snow-business-park-m-3s-oxford-properties-stantec.35587/

Toronto is home to a number of business parks, areas with a concentration of offices and light industrial businesses. Business parks often feature extensive lawn and landscaped areas in and around businesses. These spaces represent an under-explored opportunity for improved connectivity.

Toronto/GTA Business Parks


https://www.realpropertieslimited.com/toronto/skyway-business-park/

SKYWAY BUSINESS PARK ETOBICOKE, ON.

The Skyway Business Park in Toronto is a commercial and industrial area. park has developed over several decades, with its roots tracing back to the mid-20th century as Toronto expanded its industrial and commercial hubs to accommodate growing businesses.


https://tours.bhtours.ca/55-209-wicksteed-ave/nb/

LEASIDE BUSINESS PARK TORONTO, ON.

The area began developing in the mid-20th century as part of Toronto's broader expansion and urbanization. Historically, Leaside was known for its industrial activity, with warehouses, manufacturing plants, and businesses occupying the area.


https://leasing.dream.ca/building/t0063-north-york-business-park/

NORTH YORK BUSINESS PARK TORONTO, ON.

Today, North York Business Park is a vital part of Toronto's broader business landscape, offering a mix of modern office spaces, industrial facilities, and strategic access to major highways and transit routes.

Barriers

- **Incentivising Naturalization to Commercial Companies:** The potential for increased cost as well as perceptions of property standard guidelines present barriers for companies to adapt current landscaping practices.

Opportunities

- **Updating the Official Plan:** Updating the Official Plan in respect to Employment Areas to promote biodiversity and connectivity will encourage commercial and industrial land development to increase naturalized landscaped areas.
- **Expand the Urban Forestry Grants:** Providing grants will allow for current companies to transition and increase naturalized landscaped areas.
- **Explore Cost-Saving Mechanisms:** The benefits of naturalized landscaped areas extend beyond connectivity, and present stormwater mitigation and heat island reduction opportunities. The impact of naturalized areas should be further explored to present new financial incentives. Additionally, understanding the cost of increasing and maintaining naturalized spaces can encourage adoption in other spaces in the city (ie. municipal boulevards, street verges, open spaces).

Case Studies

CARIBBEAN BUSINESS PARK SCORESBY, AUS.

The park integrates green spaces with the built environment, using a mix of native plants, trees, and shrubs to create a more natural and inviting atmosphere for both workers and visitors.

TURTLE CREEK OFFICES DALLAS, USA.

Over the years, landscape design has played a significant role in enhancing the aesthetic appeal of the district, with green spaces, tree-lined pathways, and water features that complement the urban surroundings.

EXPEDIA HEADQUARTERS SEATTLE, USA.

Features a distinctive landscape design that blends urban development with natural elements. The landscaping incorporates native plants, green spaces, and water features that complement the Pacific Northwest's natural beauty, creating a harmonious work environment.

https://tours.vision360tours.ca/41-brennan-avenue-toronto/nb/

5.0 NEXT STEPS

5.1 Future Road Map

The purpose of the roadmap is to recommend next steps for the ReWild Project as the work continues in partnership with ARC Solutions and The Ecological Design Lab.

https://www.finegardening.com/article/tips-for-evolving-a-naturalized-garden-quickly

5.1.1 Private Residential Yards

Future Work Priority

Private Residential Yards:

As part of the studio process, residential urban landscape connectivity was identified as a key priority moving forward. This could take a variety of forms, such as: understanding and showing how to increase connectivity in clusters of naturalized residential yards in a neighbourhood, showcasing alternative forms of privacy screening, or offering educational opportunities for municipal staff. A future area of this could be an expansion of the design catalogue, focusing on providing visual representations for an advocacy campaign or educational opportunity, researching the privacy screening etc.Based on the initial development of the catalogue, this could take the form of a design portfolio that could be distributed to various partners.

Future Topics for Research & Literature:

- Property assessment study on naturalized residential property

5.1.2 Financialization

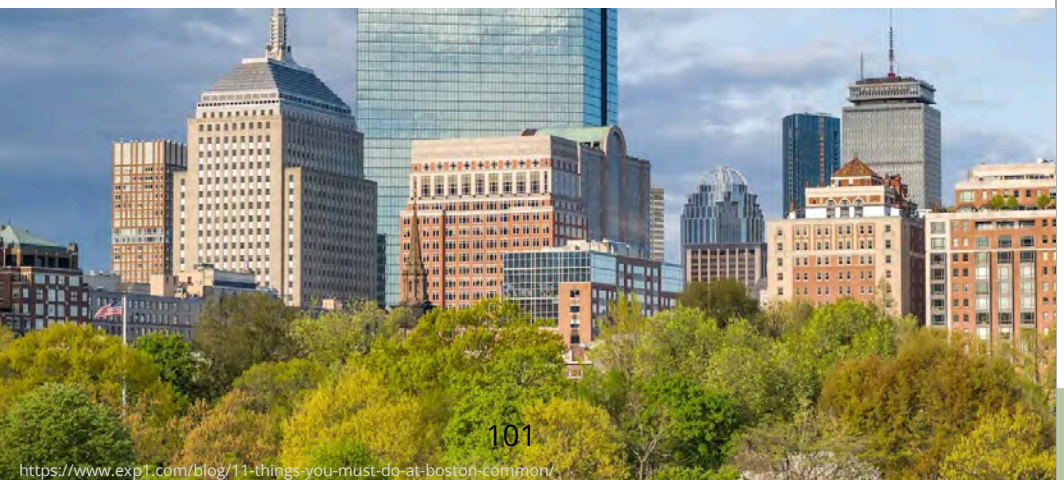
Future Work Priority

Finances and Incentives:

Further examination of the economic and financial context was a priority identified during the project process. This could include comparing what happens to land values when rewilding or naturalization occurs against people's perceptions and expectations. Other topics in this area could include examining approaches to municipal incentives related to the potential benefits associated with rewilding and naturalization.

Future Topics for Research & Policy

- The potential for incentives to foster urban landscape connectivity for individuals



https://www.exp1.com/blog/11-things-you-must-do-at-boston-common/

5.1.3 Geospatial Analysis

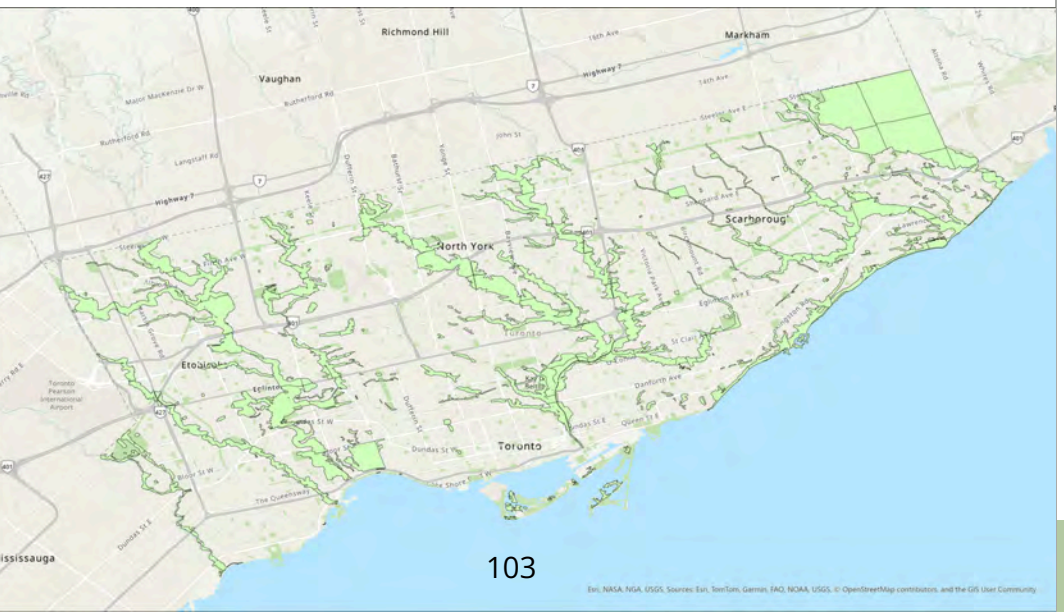
Future Work Priority

Barriers and Obstacles:

A core aspect of moving the work forward is the continued development of geo-spatial analysis. The work is necessary to identify the distinct obstacles and opportunities related to connectivity. As part of identifying areas for investment this priority enables connectivity objectives to be examined from efforts at the neighbourhood scale to eco-passages operating at regional scales and greater. This priority could require a considerable amount of resources and examination but is important to the further development of the connectivity. Furthermore, the amount of data available in relation to the types identified in the catalogue is minimal. Data for all catalogue types should be created and consolidated for a more thorough analysis.

Future Topics for Mapping Objectives

- Map private green spaces
- Show inventory of tree canopy
- Identify high density of naturalized lawns
- Identify clusters of rewilding initiatives
- Compare connectivity in affluent and less affluent neighbourhoods
- Visualize strategies to leverage individual efforts for collective impact
- Data of obstacles barriers (i.e. roads and trail separation for eco-passages)
- Dot density and weighting of typologies
- Create data sets for all catalogue types
- Create a centralized database for mapping data



5.1.4 Indigenous Partnerships

Future Work Priority

Learning and Dialogue:

Reflecting on the inception of the project, we acknowledge that this project can function as part of broader acts of reconciliation. We believe that learning from and collaboration with Indigenous peoples and knowledge holders is essential to the work examined throughout the studio process. We also recognize that any collaboration requires ongoing learning, listening, and humility as part of future efforts. As this work is about bringing together different sectors, collaboration is essential and will ground this project in principles of friendship and respect.

We also recognize the important role of collaboration and shared learning with others. This includes government organizations, professional bodies, real estate developers, conservation groups, business improvement associations and private property owners. The ability to work together in partnership will be critical to the ongoing success of this project.

Future Topics for Partnership

- Identify Indigenous planning approaches to connectivity for shared learning and collaboration
- Develop stakeholder and engagement strategy to foster broader collaboration with all partners

https://canada.constructconnect.com/dcn/news/infrastructure/2023/10/concept-designs-released-for-new-richmond-st-indigenous-inspired-park

6.0 CONCLUSION

The Rewild TO pilot project has illuminated the significant potential and critical need for enhancing urban landscape connectivity across the Greater Toronto Area. Our comprehensive analysis of literature, policy frameworks, spatial data, and green space types reveals both challenges and promising opportunities for integrating public and private lands into a cohesive ecological network.

The findings demonstrate that connectivity is not merely an ecological imperative but a multifaceted opportunity that intersects with climate change resilience, community engagement, and reconciliation efforts. The Connectivity Catalogue we've developed provides practical insights into six key types where strategic interventions could yield substantial biodiversity benefits. Our geospatial analysis further confirms that while affluent neighbourhoods currently show greater connectivity potential, there are untapped opportunities across diverse communities throughout Toronto.

Moving forward, we recognize several critical paths for advancing this work: developing strategies to support and connect private residential rewilding efforts; exploring economic incentives that make connectivity initiatives accessible to all communities; expanding our mapping capabilities to identify priority intervention areas; and finally fostering meaningful relationships with Indigenous partners.

The challenges of climate change and biodiversity loss require innovative, collaborative approaches that transcend traditional boundaries between private and public spaces. By reimagining our urban landscape as an interconnected ecological system rather than fragmented parcels, we can create more resilient, biodiverse, and livable communities. The Rewild TO project represents an important step towards this vision, bridging disciplinary silos, connecting stakeholders, and ultimately reconnecting natural systems that sustain both wildlife, flora and fauna, and human communities across the Greater Toronto Area.

This work is not merely about ecological restoration but about fostering a new relationship between urban dwellers and the natural world, one that recognizes our interdependence and collective responsibility as stewards of a shared landscape. Through continued collaboration, research, and implementation of the strategies identified in this report, we can create a more connected and resilient Toronto for future generations.

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Appendix A - Site Visits


The Meadoway
MEADOW RESTORATION
This area has been planted with native wildflowers and grasses. Patience is critical for the success of any meadow. You can expect to see beautiful wildflowers in the summer and fall each year. Meadows are a vital component of our natural landscape as they provide food and shelter particularly for birds and butterflies. Maintenance mowing will occur every 3-4 years.
Scan Me
www.themeadoway.ca
ATTENTION
This is a
NO MOW
AREA
www.trca.ca


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Strategy Document and Policies	Private	Both	Public	Code	Gap/Opportuntities
Wild, Connected and Diverse: A Biodiversity Strategy for Toronto					I feel like actions lack specificity
Action 2: Develop action plans for regional species of concern - Action plans will provide guidelines for protecting, enhancing and creating habitat, a strategy for monitoring life-cycles and an implementation plan. Key habitat types will be identified using a landscape level approach. The work will engage experts and citizen scientists to provide advice on target species and/or species groups.	☐	☑	☐	Collaboration	- does not explicitly state how it will address connectivity - action could benefit from identifying priporiy areas for restoration or enhancement - monitoring is mentioned no clear metrics or indicators
Action 4: update watershed plans - Update to identify and prioritize land use and infrastructure measures to protect, restore and enhance the biodiversity health of terrestrial and aquatic habitats within watersheds.	☐	☐	☐	Recognition	- emphasizes biodiversity health but not how they plan on improving connectivity - watershed plans often focus on boundaries of the water shed itself, but species need to move between them.
Action 4: Develop a regional biodiversity strategy - Support the development of a regional biodiversity strategy to protect and restore biodiversity across jurisdictional boundaries.	☐	☐	☑	Not Applicable	- lack of specificity - doesn't clarify whether changes in laws or regulations wil be necessary to facilitate cross-jurisdictional collaboration
Action 7: Develop best practice guidelines for buffer adjacent to major new developments - Guidelines will address elements such as native planting species, width of buffer and location of trails in order to protect and enhance natural features.	☐	☐	☑	Recognition	- doesn't address how the buffer zones will enhance connectivity - briefly mentions trails, but doesn't address how human access will be balanced with biodiversity protection - strategy mentions buffer width, but doesn't indicate whether it will be adaptable to different landscapes
Action 8: Review policies and bylaws for opportunities to support biodiversity - Undertake reviews of: Zoning Bylaw soft landscaping requirements for properties adjacent to ravines; and Property Standards and Grass and Weeds Bylaws for additional opportunities to support biodiversity. Continue to develop policies to support biodiversity in area-based planning studies, secondary plans and site and area specific policies. Review opportunities to further protect migratory and breeding birds from hazard related to development adjacent to natural features.	☐	☑	☐	Not Applicable	- focuses on soft landscaping, grass, weeds by laws may not be comprehensive enough - action mentions development adjacent to natural features, it does not specify hwo development plans will be assessed or modified to prioritize connectivity
Action 9: Identify opportunities and priority sites for restoration - Identify and prioritize opportunities to increase ecological function and resilience of natural areas throughout the City. This work will be in addition to on-going work on Environmentally Significant Areas (ESAs) and the Ravine priority areas and will complement Pollinator Protection Strategy actions. Activities may include adding to the diversity of native plant species and, where appropriate, facilitating the spread of established native plant communities and establishing refuge and stopovers for species such as birds and butterflies. This work would include both private and public lands such as hydro corridors, public realm, green roofs, and capital infrastructure projects.	☐	☑	☐	Recognition	- policy emphasizes restoration and species diversity, doesn't outline goals or metrics for connectivity - mentions green roofs and infrastructure projects but does not detail strategies for overcoming or mitigating barreirs - mentions private lands, there are no guidelines for engaging private landowners of incentivizing participation in connectivity - native species promotion is mentioned, there is no managing or removing invasive species, which can hinder connectivity - birds, adn butterflies are emntioned, the policy doesnt address connectivity
Action 14: **Identify and construct 'eco-passages and 'wildlife corridors'** - TRCA to identify locations to facilitate **habitat connectivity** and wildlife movement, including aquatic species, using a systems based approach within and around the Natural Heritage System.	☐	☐	☑	Recognition	- doesn't specify clear criteria for identifying eco-passages and wildlife corridors. - noo mention of prioritizing areas based on urgency or ecological importance - only mentions 'within adn around" the Natural Heritage System but may not consider broader regional connectivity
Action 16: promote and expand awards certification programs for properyty owners - Promote existing programs that recognize property owners for creation of biodiverse front/ back yards that use native plant material. Work with partners to expand awards/ certification program to recognition of other biodiverse landscapes. Develop evaluation criteria for inclusion of biodiversity in the evaluation of submissions to the Toronto Urban Design Awards	☑	☑	☐	Incentive	- action emphasized front and back yards of private property owners, bo mention of publci alnds, commercial proeprties etc. - policy is heavily focused on awards and recognition, which may be a sufficient incentive adn long-term maintenance of biodiverse and connected landscape.

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Strategy Document and Policies	Private	Both	Public	Code	Gap/Opportuntities
Action 20: Develop a guide on 'backyard biodiversity' and a 'biodiversity toolkit for children - Address the importance of biodiversity and best practices for what residents can do to support biodiversity in their backyards. Toolkit to use characters to connect concept of biodiversity to children's world.	☑	☐	☐	Collaboration	- policy focsues on private spaces rather than broader urban landscape. - toolkit directed at children, eleiminating other demographsic who may be interested in engagign biodiversity efforts.
Our Plan Toronto: Final Environment and Climate Change Official Plan					
Theme 2) Resilience and Adaptation, which includes updates related to biodiversity, natural heritage, water resources, stormwater management, and our urban forests;	☐	☐	☑	Resilience	
The Official Plan articulates the City's vision for the future, directs land use, and guides city building decisions that can help address our goals as we plan within a climate and biodiversity emergency. In preparing the draft updates to the Official Plan, staff were mindful of the global context of the dual crisis related to biodiversity loss and climate change.	☐	☑	☐	Resilience	
Feedback from the Province (staff response): New references to the Species at Risk in Ontario List has been added to explanatory text within the 'Biodiversity' sidebar; the proposed excess soils policy has been refined to address the Province's concerns	☐	☐	☑	Not Applicable	
Updates related to resillence and adaptation include: New policy encouraging development adjacent to the Natural Heritage System to provide natural landscaped surfaces that increase the ecological function and/or biodiversity (2.3.1 Healthy Neighbourhoods)	☐	☑	☐	Resilience	
The Provincial Policy Statement (PPS) provides policy direction on land use planning and development matters to promote strong communities, a strong economy, and a clean and healthy environment. It includes policies on key issues that affect communities, such as promoting development and land use patterns that conserve biodiversity;	☐	☑	☐	Not Applicable	
The Official Plan updates presented in this report continues Toronto's strong legacy of bringing forward leading-edge policies that protect the natural environment, preserve and enhance biodiversity and address climate change.	☐	☐	☑	Resilience	
Resillence and Adaptation: New policy to consider Great Lakes Strategy, and Great Lakes Protection Act when undertaking watershed and /or waterfront planning (3.4 The Natural Environment).	☐	☐	☑	Not Applicable	
Resillence and Adaptation: Expanded the natural heritage system (Map 9A) to include water resource features and ravine and natural feature protected areas and to add a contributing areas layer and explanatory sidebar (3.4 the Natural Environment);	☐	☑	☐	Resilience	
Feedback from the Province: Consistency with the Growth Plan (2020) and Provincial Policy Statement (2020): adding references to significant coastal wetlands and coastal wetlands; directly referencing species listed on the Species at Risk in Ontario List; and identifying best management practices that should be utilized for excess soils • City staff response: New references to the Species at Risk in Ontario List has been added to explanatory text within the 'Biodiversity' sidebar; the proposed excess soils policy has been refined to address the Province's concerns	☐	☐	☑	Not Applicable	

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Pollinator Protection Strategy					
Action 1: Plant more pollinator-friendly native plants, trees, and shrubs in City parks and facilities, with the goal of creating pollinator habitat in every park, where feasible.	☐	☐	☑	Objective	- action only focuses on city parks and facilities, but does not address connectivity with private lands, urban gardens, or other green spaces. - action mentions planting pollinator-friendly native plants but lacks specificity about microenvironments - action does not mention providing habitat for overwintering or migratory pollinators
Action 5: Review the City's landscaping practices, including mowing and mulching activities, with the goal to preserve pollinator habitat.	☐	☐	☑	Objective	- lacks concrete steps - no mention of timing activities, pollinator habitats can be disrupted by mowing or mulching during critical pollinator seasons - doesn't specify different habitat needs - no mention of promoting natice, pollinator-friendly plant species. - doesn't address the importnace of landscape connectivity
Action 6: Identify opportunities to improve connections between existing habitat, and encourage the creation of "pollinator pathways" to foster corridor creation across the city	☐	☐	☐	Recognition	- lack specificty on how opportunities will be identified - no mention of monitoring - no reference to coordinating with private owners - no mention or addressing invasive species or ensuring the quality of the created pathways - no mention of coordinating with urban planning to ensure pollinator pathways
Action 8: Enhance areas of the City Hall podium green roof with pollinator-friendly habitat, where possible, accompanied by educational signage, to demonstrate the role green roofs play in pollinator habitat and corridor creation.	☐	☐	☑	Recognition	- focues on the City Hall podium green roof which is a narrow scope - no explicit mention of how this action ties into larger pollinator corridors - no mention of community or private sector involvement - no specific mention of plant diversity to attract a wide range of pollinators
Action 9: . Engage with developers, property owners and landscape architects to encourage the creation of pollinator-friendly landscapes and promote biodiverse, pollinator-friendly green roofs, by updating information in the City's Guidelines for Biodiverse Green Roofs and by offering support through the City's existing Eco-Roof Incentive Program.	☐	☑	☐	Collaboration	- action promotes individual green roofs but no on creating adn connectign green spces - focus on developers and property owners but doesn not address coordinator with public infrastructure - no mention of ongoin gmonitoring or maintenance - general focus, doesn't account for specific needs of different polinator species. - eco-roof incentive program is mentioned, there is no detail on compliance measures or incentives for ensuring landscape connectivity
Action 11: Engage with the Toronto Association of Business Improvement Areas (TABIA), property and rental associations, condominium boards, faith groups and other large property owners to encourage the creation of pollinator habitat through native plantings.	☑	☑	☐	Collaboration	- action has no measureable goals or timelines - native plants are encourages, no emphasis on ensuring these habitats are spatiallyy connected - action targets large property owners, but not smaller properties or public sspaces liek parks, green roofs etc. - lack of incentives
Action 12: . Partner with Toronto Master Gardeners, Landscape Ontario and horticultural and landscape school programs to provide advice and inspiration to property owners in Toronto interested in creating pollinator habitat through on-site consultations and information sessions.	☐	☑	☐	Collaboration	- provides advice for individual property owners, does not address continuous habitat corridors - no mention of working with public parks, roadways, or utility corridors - no explicit mention of encouraging the use of native plant species

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Action 18: Explore the creation of a City procurement policy to purchase more pollinator-friendly native plants, and to select plants and seeds that have not been treated with systemic pesticides (e.g. neonicotinoids) for use in City-managed spaces, and incorporate these guidelines into tender documents for all City divisions.	☐	☐	☑	Not Applicable	- action focuses on city-managed spaces, not addressing privately yowned lands or non-city managed areas. - no specific or clear metrics, deadlines, or objectives. - lack of connectivity language - no incentives for encouragign developers, business or homeowners to adopt pollinator friendly practices - language is broad and does not specify whether diversity of native plants will be prioritized
Action 19: Inspire residents to create pollinator habitat by offering resources such as pollinator-friendly gardening tips, plant lists, seeds, and recognition signage (e.g. Pollinators Are Welcome Here!) through Community Environment Days and Live Green Toronto outreach events.	☐	☑	☐	Collaboration	- mainly focuses on small, isolated spaces (individual gardens) - no stratgy to map out pollinator gardens most needs areas - lack of publci land involvement ie. parks, boulevards, or abandoned lots - action focuses on outreach events, but broader outreach through schools, community centers etc could enhhance participations - action doesn't mention integratign pollinator habitats into broader urban plannign policies (zoing, development plans etc)
Action 22: Develop pollinator-friendly gardening practices tips and share lists of pollinator-friendly native plants, trees and shrubs suited to the Toronto area.	☐	☑	☐	Collaboration	- limited focus on urban connectivity - no mention of monitoring the effectiveness of these gardens - lackk of emphasize on seasonal variation - insufficient consideration of non-native species impacts - no collaboration with developers or urban planners

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Strategy Document and Policies	Private	Both	Public	Code	Gap/Opportuntities
Toronto Ravine Strategy					
Action1: Develop and implement Management Plans to protect Environmentally Significant Areas (ESAs).	☐	☐	☑	Not Applicable	- limited focu to connectivity: action emphasizies protecting individual ESAs but not explicitly address how these areas are connected to each other - without connectivity measures, ESAs may be isolated leading to genetic bottlenecks - action doesn't mention how to manage external pressues such as urban sprawl or infrastucutre development - no metion fo indigenous communities in connectivity planning
Action 2: Ensure high quality planning, design, construction and maintenance in our ravines by continuing to develop and implement best practices for capital projects and on-going maintenance of infrastructure and natural ecosystems, including trail accessibility, dumping and litter, and invasive species management.	☐	☐	☑	Not Applicable	- lack anguage describing habitat corridors to allow wildlife to move freely between different ravine areas - urban developemnt near ravines may disrupt connectivity, the strategy doesnt not explicitlyy outline how to mitigate the impacts of roads, buildings, or other infrastructure. - strategy does not mention hwo water bodies flowign through ravines contribute to landscape connectivity - action doesn't mention maintenance, but does not discuss long-term monitoring
Action 8: Identify ten Priority Investment Areas based on the Ravine Strategy framework and undertake studies and develop plans, as needed, to implement improvements in these areas.	☐	☐	☑	Not Applicable	- this action feels limiting, only identifyign 10 priority investment areas may be insufficient given the size and complexity of Toronto's ravine system. - no specific mention of how connectivity will be prioritized - no mention fo engagign lcoal communities, indigensou groups, other stakeholders
Action 9: Develop key opportunities to develop 'hubs' within or 'gateways' or 'portals' into our ravine system based on planned investments and the Priority Investments Areas Study	☐	☑	☐	Not Applicable	- primarily focuses on infrastructure and access points rather than ensuring ecological corridors - no mention of hwo hubs adn gateways will connect with other green spaces, parks, or urban corridors. - no mention of involving local communities, indigenous groups etc. - hubs and gateways are mentioned, theres no discussion on ensuring accessibility for peopel with all abilities or addressing potential barriers for marginalized groups
Action 10: : Work with the TRCA, as well as other agencies, municipalities and the Province, to develop a valley lands acquisition strategy that identifies opportunities to bring additional lands within the ravine system – including buffer areas adjacent to ravines – into public ownership with a focus on natural habitat and trail connections.	☐	☑	☐	Collaboration	- there is no clear timeline or deadline for developign the valley lands - noo mention to hwo acquisitions will be refundd or how resources will be allocated - focus is on primarily acquiring adjacent lands to ravines but does not addrss connectivity across urban or fragmented areas - policy does not outline criteria for identifying and prioritizing lands for acquisition - polciy doesn't address how private landowners adjacent to ravines may be incentivized to participate in conservation or connectivity - no mention of long-term plans or partnerhsips - trail connections are mentioned, but no mention of accessibility or how trail expansions will balance publci access Does discuss that 40% of Toronto's ravines are privately owned. Limits the city's ability to improve connections in the ravine systems

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Action 12: Review existing trails and access points and develop an implementation plan to address gaps in the system and connections to trails that run east-west and to trail systems in adjacent municipalities	☐	☐	☑	Recognition	- emphashizes human trail connectivity but not wildlife corridors or habitat continuity - action mentions connections to adjacent municipalities, doesn't specify collaboration mechanisms or shared design standards - action doesn't address environmental risks liek flooding, erosions - action doesn't mention the potential for cultural or education features along trails to enhance community connection Unfortunately, many areas of our ravine system are not currently accessible to most Torontonians due to a lack of trails or degraded infrastructure. The City must increase opportunities for people of all abilities to enjoy and explore the ravines in a manner that respects the ecological health of the system.
Action 14: Build partnership opportunities and capacity to expand the Community Stewardship	☐	☑	☐	Collaboration	- focsues on partnerships and steawardship, no clear priority on enhancing physical or ecological connectivity - doesn't emphaize the inclusion of broad range stakeholders - no mention of mechanisms to track effectiveness fo stewardship in improving connectivity - strategy focuses on ravines, not broader network green spaces - partnerships may be limited without adequate fundign or resources to promote landscape-scale connectivity
Action 15: : Work with the TRCA, the Province and other municipalities to continue to ensure implementation of best practices for all urban river valleys that connect to Toronto's ravine system. Work with the TRCA to establish forums for dialogue, bringing these parties together and reinforcing the importance of continuity of the ravine systems and comprehensive inter-municipal management	☐	☐	☑	Collaboration	- lack specific implementation, or steps for ensuring urban valley conenctivity - no mention of how connectivity of the ravine systems will be monitored - action does not clarify how potential conflicts between municipal or provincial policies will be resolved - establish legal frameworkd or agreements to streamline inter-municipal policy alignment and resolve disputes
Action 17: Identify opportunities to partner with and leverage private philanthropic support to invest in specific ravine enhancement projects, such as improved access, hubs, and gateways, and natural feature enhancements.	☐	☑	☐	Collaboration	- focuses on "hubs, gateways, and natural feature enhancements without addressing the critical role of ecological corridors - while private philanthropic support is mentioned, there is no clearn mention of working with private landowners whose properties play a role in connectivity - does not havev quantifiable measurabel goals - mentions improved access, hubs and gateways, may prioritize human use over ecological integrity, leading to habitat disturbance - no mention of how these effordts will be coordinated across different projects, land uses, municipal departments to ensure a cohesive strategy.
Action 20: Develop a communications strategy to promote ravines as a natural asset and a key part of Toronto's identity in collaboration with Tourism Toronto and other key stakeholders.	☐	☑	☐	Collaboration	- emphasizes promotion adn communication, but not any direct steps toward improving or preserving the physical connectivity of ravine habitats - no mention of incorporating biodiversity considerations - whiek key stakeholders are mentioned, there is no clear outline for environmental experts. - action focuses on collaboration with tourism organizations, doesnt address local communities - no mention of workign with neighbouring municipalities or conservation authorities for connectivity

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Toronto's Strategic Forestry Management Plan					
Toronto Official Plan Supporting the Urban Forest Policy 3.4.1 (d) identified the need for preserving and enhancing the urban forest by i. providing suitable growing environemnts for trees ii. increasign tree canopy coverage and diversity, especially of long-lived native and large shade trees iii. regulating the injury and destruction of trees	☐	☐	☑	Not Applicable	- there is no mention of connectivity between green spaces, linkign urban forests, parks of natural areas to create continuous green corridors. - they dont have strong biodiversity considerations the policy focuses on trees but doesn't consider other vegetation or species - no mention of how urban forests and green spaces should be managed to adapt to CC - policy mentions regulating injury and destruction of trees, lacks detail on monitoring and enforcing compiance to ensure connectivity - shoud include policie on creatign and preservig green corridors to enhance habitat connectivity - broaden the policy to promote undergrowth and native species that can provide for various species.
Toronto Official Plan Policy 3.4.1 (b) identifies the importance of protecting and restoring the health and integraity of the natural ecosystem, supporting bio-diversity in the city, targeting ecological improvements paying attention to i. habitat for native flora and fauna and aquatic species ii. water and sediment quality iii. landforms, ravines, water courses, wetlands, and shorelines and associated biophysical processes iv **natural linkages** between the natural heritage system and other green spaces.	☐	☑	☐	Recognition	- there is mention of natural linkages, does not specify how urba barriers will be managed to facilitate connectivity - no mention of climate change - no emphasis on public engagement or education - no mention of how connectivity can be monitored - focuses on linkages within the city, landscape connectivity is also dependent on regional adn cross- boundary connections,
6.2.2 Tree Maintenance Requirements and Expectations: Solutions continue implementation of the newly planted tree maintenance program to provide early and proactive maintenance to protect the City's tree planting investment and potential benefots these trees bring to the community	☐	☐	☑	Not Applicable	- focuses on tree maintenance, but does not explicitly address the importance of planting and maintaining in a way that promotes wilflife corridors or address connectivity - does not discuss tree maintenance/ coordinatrop across green spaces.
6.2.2 Tree Maintenance Requirements ... Improve public awareness of i. proper planting, watering, mulching, and tree protection tecniques	☐	☑	☐	Not Applicable	- focuses on tree care but not have trees should be maintained to encourage connectivity - no reference to how trees contribute to habitat creation for birds, insects, small mammals necessary for connectivity - no mention of CC adaptation - no mention of collaboration between municipalitiees, private landowners, other stakeholders
6.3.1 Balacing urbanization impacts nad sustaining the urabn forest for planting in hard surfaces, design must include: - sufficient volume of unpacted, good quality soil for each tree (approx, 40 cm diameter of good soil) - a method of supporting the sidewalk that does not result in compacted soil - easy access for maintaining and installing a new utility service - a method of reparing the diswalk while restorig the uncompacted soil conditions	☐	☐	☑	Not Applicable	- just mentions tree planting, not other plant speciesi or overal habitat connectivity - no stormwater management techniques that enhance tree health (ie. incorporate permeable paving and bioswales. - no mention of creating wildlife sorridors to connect fragmented habitats - while it mentions soil volume and compation, there isn't mention of nutrient cycling or bicrobial health.
6.3.1 Design solutions - open planting bed: easiest, most cost effective way of providing good growing conditions for trees is to plant in open planting areas. - requires an agreement between the city and adjacent property owner	☐	☑	☐	Not Applicable	- no mention of how planting beds will be designed ot connect green spaces and promote wildlife corridors. - no mention hwo planting beds will contribute to stormwater management - no reference to broader environemntal objectives - no guidlines to hhow planting bed will be integrated with other urban infrastructure

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6.3.2 Soutions - work with relevant city divisions to complete a review of land use, planning, and zoning policies to identify regulatory constraints to achievign canopy expansion - utilize all available tree planting locations - develop mappign systems that: support planting activities, facilitate effective communication of information to stakeholders, and ensure the currency of data recording - undertake strategic plantign prioritized in the areas of most need 1. residential boulevards where trees have been removed 2. public lands outside of planned infrastructure work areas 3. parkland and on strees in neighbourhoods where the canopy is singificantly lower than city average - centralize tree plnating function and pilot new models for planting services inr esidential areas - market the City's free residential tree planting program for front yards - design and implement a pilot study in cooperation with urban design, business improvement areas, ad private businesses to increase tree cover in selected commercial and indistrial areas	☐	☑	☐	Not Applicable	- doesn't address creatign green corridors or linkign fragmented habitats - policy is heavily focused on public spaces and residential front years, but not addressing incentivizing or paterning with private lawn owners to increase canopy cover. - general mention fo areas whre canopy is low, but no detailed equity strategy - n**o menton of collaborating with Indigenous communities or incorporating their traditional ecological knowledge**
6.5.2 Recreational pressures on the urban forest: solutions - develop policies aimed at restricting inappropritate land uses and preventing further habitat fragmentation in significant natural areas - collaborate with the Parks branch and TRCA to create a natural environment framework that identifies, selects and prioritizes natural area management sites, with a focus on improving habitat size and shape, use of native species, and **improving linkages between habitats**, - explore options for securing strategic land acquisitions with a view to **improve key linkages** **between parkland sites and protect natural areas** from future development, - protecting and managing natural areas through the strategic placement of trail systems, design solutions for resource protection and by-law enforcement - continue engagement of the public through programs supporting private land and garden naturalization and education by Tree Protection and Plan Review staff,	☐	☑	☐	Collaboration Recognition	- mentions improving linages, but lacks specific, measurabel goals for connectivity - no mention of working with surrounding municipalities or region beyond TRCA - doesnt explicitly consider how new developemtn can integrate green corridors or wild-life infrastrucutre - private land naturalization prorams are mentioned, there is no clear mention of financial incentives or partnership programs to encourgae private landowners to preserve or enhance connectivity - the policy doesnt' discuss potentual in GIS mapping, wildlife tracking, orther technologies to better plan and access connectivity efforts.
6.6.2 Increasing public awareness of the value and sensitivity of thhe urban forest: solutions - increase public education regarding natural area management activities, trail systems and appropriate trail user conduct to protect natural areas. - explore the potential for fund creation by private partners to finance land stewardship of privately owned sites adjacent to public property where there is opportunity for contiguous canopy benefits - continue to make City street tree data available to individuals and community groups to facilitate neighbourhood studies of local forest conditions	☐	☑	☐	Collaboration	- lack expicit focus on creatign or maintains wildlife corridors or green linkages to connected fragmented landscapes - mention fo proviate funding for stewardship, there is no clearn strategy for engaging private landowners in connectiivty planning - no mention of collaboration with transportation, urban planning, water management etc.
					All private and public land are subject to these by-laws By-laws mentioned: Street Tree, private Tree and Ravine an Natural Feature Protection by-laws.

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Green Streets Technical Guidelines					
Objectives • Enhancing the extent and longevity of the urban forest; • Mitigating urban heat island effect; • Managing stormwater runoff to mitigate flooding and enhance water quality; • Promoting infiltration to sustain shallow groundwater systems and maintain interflow patterns; • Enhancing air quality; and, • Conserving / generating energy	☐	☐	☑	Not Applicable	Connectivity is not an objective, already has selection critiera for "green streets"
3.2.3 | Ecopassages Ecopassages are bridges or tunnels that guide animals and reptiles safely over or under roads and highways. Within the City of Toronto, ecopassages can be particularly valuable on streets that bisect the Natural Heritage System (NHS) by facilitating wildlife migration and aiding in the reduction of road mortality. The Toronto and Region Conservation Authority's (TRCA) Crossings Guideline for Valley and Stream Corridors (TRCA, 2015) addresses ecopassage design in detail and should be referenced whenever ecopassages are considered for implementation as part of a Green Streets project	☐	☐	☑	Recognition	There is a notable lack of information on when and how to implement this item.
Toronto Green Standards					
Natural Heritage Protection EC 3.2 Ravine & Natural Feature Protected Area and NHS - Plant the landscaped area within the Ravine and Natural Feature Protected area and the Natural Heritage System with 100% native plants, ensuring at least 50% of those come from a regionally appropriate seed source (including trees, shrubs and herbaceous plants).	☐	☐	☑	Not Applicable	
Landscaping & Biodiversity EC 2.2 On-site Landscaping - Plant the at-grade landscaped site area using a minimum of 50% native plants (including trees, shrubs and herbaceous plants) comprising at least two native flowering species that provide continuous bloom throughout all periods over the growing season	☑	☐	☐	Not Applicable	
Climate Positive Landscapes EC 4.1: Climate Positive Landscape Design - incorporate low-carbon sustainable material alternatives to the proposed landscape design. Landscape Design i. Reduce lawn areas (low carbon sequestration potential, high maintenance inputs), and expand meadows or perennial/shrub plantings.	☑	☑	☐	Resilience	

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Parkland Strategy					
Recognize the role and importance of parks in supporting biodiversity and as wildlife corridors, and help to contribute to that role.	☐	☐	☑	Recognition	lack of action steps to contribute
Continue to improve the public realm (e.g. streets, publicly accessible spaces) where it serves to connect and complement the parks system and support an interconnected network of parks and open spaces	☐	☐	☑	Not Applicable	
Work with the school boards to develop an improved and inter-connected park and open space system.	☐	☐	☑	Collaboration	
TRCA Strategic Plan					
Maintain healthy and resilient watershed ecosystems in the face of a changing climate Protect, manage and enhance biodiversity	☐	☐	☑	Resilience	Does not recognize landscape connectivity in entire document
Complete Streets Guidelines: Chapter 2 Street Types					
Mixed-Use Connector Streets: These streets are candidates to introduce stormwater control measures in the planting zone between curb and sidewalk, and where applicable, in the frontage zone.	☐	☐	☑	Not Applicable	While stormwater control is mentioned, habitat connectivity is not a factor when considering adding naturalization
Residential Connectors: Residential Connectors are candidates to introduce stormwater control measures in the planting zone between curb and sidewalk, and where applicable, in the frontage zone.	☐	☐	☑	Not Applicable	
Scenic Streets: Scenic Streets often have large and healthy trees that together create a substantial canopy. The adjacent open spaces present many opportunities to introduce storm water control measures.	☐	☐	☑	Not Applicable	
Park Streets: These streets present many opportunities to introduce stormwater control measures.	☐	☐	☑	Not Applicable	
Employment Streets: Many are candidates to improve street tree planting and introduce stormwater control measures in the planting zone between curb and sidewalk (where present).	☐	☐	☑	Not Applicable	
Residential Lanes: Although space for tree planting is limited, Residential Lanes do provide opportunities to introduce green street design elements and planting to create more inviting and useful spaces.	☐	☐	☑	Not Applicable	
Chapter 7: Street Design for Green Infrastructure					
The following contextual factors are considered when identifying streets (and locations on streets) for green street design: • Street type – including components such as intensity of demand from other users and uses • Available right-of-way width and building setbacks • Site physiography (soil permeability, topography, depth to water table or bedrock, soil contamination) • Surface water flow routes • Sunlight • Open space context – adjacent natural heritage systems, open space and parks • Storm drainage infrastructure • Underground transit infrastructure • Utilities infrastructure (underground and overhead) • Proximity to known flooding • Urban forest cover • Watershed context – erosion vulnerability • The need and availability of operation and maintenance • Curbside accommodations for goods movement, delivery and loading • Sightlines and other safety considerations • Setbacks from intersections and other street infrastructure	☐	☐	☑	Not Applicable	Connectivity is not a factor or principle

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Greenbelt Plan					
For lands within a key natural heritage feature or a key hydrologic feature in the Protected Countryside, the following policies shall apply: 1. Development or site alteration is not permitted in key hydrologic features and key natural heritage features within the Natural Heritage System, including any associated vegetation protection zone, with the exception of: a) Forest, fish and wildlife management;	☐	☑	☐	Not Applicable	
To support the connections between the Greenbelt's Natural System and the local, regional and broader scale natural heritage systems of southern Ontario, such as the Lake Ontario shoreline, including its remaining coastal wetlands, the Great Lakes Coast, Lake Simcoe, the Kawartha Highlands, the Carolinian Zone and the Algonquin to Adirondack Corridor, the federal government, municipalities, conservation authorities, other agencies and stakeholders should: a) Consider how activities and land use change both within and abutting the Greenbelt relate to the areas of external connections and Urban River Valley areas identified in this Plan; b) Promote and undertake appropriate planning and design to ensure that external connections and Urban River Valley areas are maintained and/or enhanced; and c) Undertake watershed planning, which integrates supporting ecological systems with those systems contained in this Plan.	☐	☑	☐	Not Applicable	
2. The river valleys that run through existing or approved urban areas and connect the Greenbelt to inland lakes and the Great Lakes, including areas designated as Urban River Valley, are a key component of the longterm health of the Natural System. In recognition of the function of the urban river valleys, municipalities and conservation authorities should: a) Continue with stewardship, remediation and appropriate park and trail initiatives which maintain and, to the extent possible, enhance the ecological features and functions found within these valley systems; b) In considering land conversions or redevelopments in or abutting an urban river valley, strive for planning approaches that: i. Establish or increase the extent or width of vegetation protection zones in natural self-sustaining vegetation, especially in the most ecologically sensitive areas (i.e. near the stream and below the stable top of bank); iii. Include landscaping and habitat restoration that increase the ability of native plants and animals to use valley systems as both wildlife habitat and movement corridors; and	☐	☐	☑	Not Applicable	
Vegetation protection zone Means a vegetated buffer area surrounding a key natural heritage feature or key hydrologic feature.	☐	☑	☐	Not Applicable	
2. Environmental Protection a) Protection, maintenance and enhancement of natural heritage, hydrologic and landform features, areas and functions, including protection of habitat for flora and fauna and particularly species at risk;	☐	☑	☐	Not Applicable	
4. Include the following considerations in municipal trail strategies: a) Preserving the continuous integrity of corridors (e.g. abandoned railway rights-of-way and utility corridors); b) Planning trails on a cross-boundary basis to enhance interconnectivity where practical;	☐	☐	☑	Recognition	
The river valley corridors designated as Urban River Valley provide a foundation for additional public lands to be added to these areas in the Greenbelt in the future by amendment.	☐	☐	☑	Not Applicable	
Natural Heritage System Strategy					
Goal - To work with all stakeholders to identify and protect a land base comprised of "existing" and "potential" natural cover and to fully secure and restore a target terrestrial natural system by 2100 that will both protect and restore native biodiversity.	☐	☑	☐	Collaboration	Will the potential natural cover include private?
5.1 - Development setbacks: buffers and setback requirements should be identified for redevelopment sites in order to reduce pressure on the system's edge. Over time, the implications of major redevelopment and intens f cat on on the terrestr al natural system w ll need to be determ ned and evaluated.	☐	☑	☐	Not Applicable	A great opportunity for new development or infill, but does not address current development

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5.1 - System management: restorat on/recovery planting will be the first activity. Constructed or created habitat structures, such as nesting structures, hibernacula, wetlands and or buffer plantings can enhance the function of natural cover. As well, active management of terrestrial natural cover will be necessary to maintain quality, in particular, the control of non-native invasive species and reintroduction of native species where possible.	☐	☑	☐	Not Applicable	
Updated Target Natural Heritage System: A Summary Report					
The impacts of urbanization and land conversion to urban uses have resulted in biodiversity habitat loss, fragmentation, and degradation that have affected ecosystem functions. Recognizing these impacts and the need to protect existing natural features/areas, as well as to restore potential ecologically functioning areas, the concept of an NHS was incorporated into the Provincial Policy Statement (PPS) in 1994. According to the PPS (2020), an NHS is: "a system made up of natural heritage features and areas and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue".	☐	☑	☐	Not Applicable	
TRCA developed a regional strategy using a systems approach in 2007, referred to as the Terrestrial Natural Heritage System Strategy (TNHSS), to establish, protect, and restore a network of natural cover (forest, wetland, meadow, successional, bluffs and beach) across TRCA's jurisdiction. The primary focus was on improving terrestrial biodiversity (habitat and species) and ecosystem health. The natural heritage system identified in 2007 covered 30% of TRCA's jurisdiction including 25% existing natural cover and 5% potential areas to be restored to natural cover.	☐	☑	☐	Not Applicable	
Available Field Data: includes field data on habitat and biodiversity as well as modelled data on habitat connectivity, habitat suitability, climate vulnerabilities etc.	☐	☐	☑	Not Applicable	
Other planning units were then based on 27 ecological function-based criteria in addition to the municipal natural heritage systems (Table 1). Ecological criteria were based on terrestrial and aquatic ecosystem features that would indicate planning units that were valuable to conserve. Terrestrial features were based on habitat suitability, connectivity, biodiversity, and natural cover (Table 1).	☐	☑	☐	Not Applicable	
3.3.2.1 - Urbanization alters biodiversity across the landscape by converting natural landcover to urban land uses dominated by built surfaces, which adversely affects habitat and biodiversity (Johnson and Munshi-South 2017, Nelson et al. 2009, Turrini and Knop 2015). These negative impacts can be mitigated to some extent by reducing urban sprawl and intensifying development within city boundaries using sustainable urban design and ecosystem sensitive design solutions. These solutions help support human population growth as well as provide opportunities for healthy and resilient ecosystem functions and services that benefit ecology and community well-being (Milder 2012, Norton et al. 2016).	☐	☑	☐	Not Applicable	

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Three key recommendations from this analysis highlighted that there is a need to i Develop additional policy guidance to protect natural habitats not sufficiently addressed more fully in current policy frameworks, particularly in future urban growth areas as these are the most vulnerable to removal, and ii Develop protection policies for local natural features not protected under provincial policy, particularly in rural areas that have defaulted to the provincial systems. iii Recognize the contribution of the areas that may not traditionally fit the definition of NHS (e.g., open land uses in urban portions of the jurisdiction) but may provide ecological functions and services, especially in built portions of the landscape, that otherwise would not be available if these areas did not exist.	☐	☑	☐	Recognition	
3.2.2. - Habitat connectivity and movement corridors are important for wildlife to access resources for various life cycle processes including feeding, breeding, limiting competition, avoiding predation, and to adapting to the habitat changes caused by various disturbances such as land use and climate change. Changes in landscapes that alter the amount and configuration of habitat can either facilitate or impede critical wildlife movements.	☐	☑	☐	Recognition	
Fish Habitat: These features are associated with the regulated watercourse layer (TRCA) and a 10-m buffer and directly account for aquatic habitat.	☐	☐	☑	Not Applicable	
Wildlife Habitat: Ecologically Significant Areas (ESAs 2015) identified by the City of Toronto, Areas of Natural and Scientific Interest (ANSIs) identified by province (NDMNRF 2020), and migratory habitat for birds including all natural cover within 5-km buffers from the Lake Ontario shoreline (OMNR 2005; Archibald et al. 2017) were included as additional wildlife habitat.	☐	☑	☐	Not Applicable	
Percentage of riparian natural cover and forest cover was summarized by 30-m buffers of the watercourse accounting for estimated stream width.	☐	☐	☑	Not Applicable	
Urban Zone includes areas within current urban boundaries. Most of the areas have already been converted to urban land uses with some remnant natural cover, mostly within valley and stream corridors and conservation lands. Despite being heavily urbanized, this zone includes about substantial portion of existing natural cover identified in the TRCA's updated regional target NHS (7% out of 23%). These areas warrant protection that are often provided through regulations related to valley and stream corridors and wetland protection and other municipal regulations such as City of Toronto's Ecologically Significant Areas.	☐	☐	☑	Not Applicable	
Best Practices Guide to Natural Heritage Systems Planning					
Principle: Policy should require the implementation of natural heritage system policies in zoning bylaws and subsequent amendments, as well as in other municipal bylaws.	☐	☑	☐	Not Applicable	
Principle: Policy should direct that permitted uses take into account the impact on the natural heritage system, including ecological functions, and should incorporate prohibitions on development and site alteration within the natural heritage system.	☐	☑	☐	Not Applicable	
Principle: Policy should establish a commitment or reference to maintaining, improving and restoring the biodiversity and long-term ecological function of natural heritage systems	☐	☑	☐	Not Applicable	
3.1.2 Principle: Policy should require the identification and protection of core natural heritage features and corridors, and linkages to surface water, and groundwater features and functions.	☐	☑	☐	Not Applicable	While this document examines natural heritage areas, it examines the practices largely in the space of public lands, while making recommendations for zoning-by laws that consider impacts on these public lands. There is a gap in drawing connections to neighbourhoods and city areas that block connectivity between natural areas.