City of Kingston
Report to Council
Report Number 26-054

To:	**Mayor and Members of Council**
From:	**Paige Agnew, Commissioner, Growth & Development Services**
Resource Staff:	**Brandon Forrest, Director, Business, Real Estate & Environment**
Date of Meeting:	**February 17, 2026**
Subject:	**St. Lawrence Business Park Expansion Lands Update**

Council Strategic Plan Alignment:

Theme: 5. Drive Inclusive Economic Growth

Goal: 5.1 Ensure an adequate supply of "ready-to-go" employment lands.

Executive Summary:

The St. Lawrence Business Park (SLBP) expansion lands, located at 1429 Highway 15, are currently outside the urban boundary and are not serviced. To address the ongoing shortage of City-owned employment lands, staff from the Business, Real Estate & Environment (BREE) group are advancing plans to bring these lands into the City's employment land inventory.

Following Council's direction at the February 21, 2023 meeting, staff collaborated with the Indigenous Food Sovereignty Garden Group (IFSGG) to co-develop a Shovel-Worthy Development Framework - an approach that emphasizes environmental stewardship, cultural respect, and long-term sustainability alongside economic development.

On January 23, 2024, through Report Number 24-070, staff provided Council with an update on engagement with the IFSGG and progress on the Shovel-Worthy Development Framework. At that meeting, Council directed staff to initiate the required Planning Act applications to bring the SLBP expansion lands into the urban boundary and apply appropriate designations and zones. Council also endorsed the draft Shovel-Worthy Framework in principle.

The Framework has since been finalized, and staff from BREE have been concurrently preparing the Official Plan amendment, zoning by-law amendment and draft plan of subdivision applications, collectively called the “Planning Act applications”. These applications have been developed in alignment with the Shovel-Worthy Development Framework.

The *Planning Act* applications are anticipated to be presented to the Planning Committee on March 26, 2026. Staff are also advancing Phase 2 of the Framework – the Site Development Guidelines, which will guide future subdivision design and block-level development.

The purpose of this report is to provide Council with an update on the final Shovel-Worthy Development Framework, the status of Planning Applications and the next steps for advancing the SLBP expansion lands project.

Recommendation:

That Council endorse the Shovel-Worthy Development Framework, attached as Exhibit B to Report Number 26-054, and direct staff to continue working with project partners to complete Phase 2 of the Framework - the Site Development Guidelines; and

That Council direct staff to continue working with landowners north of the St. Lawrence Business Park Expansion Lands to advocate for the expansion of the ecological corridor connecting Butternut Creek with the Indigenous Food Sovereignty Garden, to support the goals of biodiversity and ecological linkages within the corridor.

Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

Paige Agnew, Commissioner,
Growth & Development Services

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Lanie Hurdle, Chief
Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Jennifer Campbell, Commissioner, Community Services	Not required
Neil Carbone, Commissioner, Corporate & Emergency Services	Not required
David Fell, President & CEO, Utilities Kingston	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required
Jenna Morley, City Solicitor	Not required
Ian Semple, Commissioner, Transportation & Infrastructure Services	Not required

Options/Discussion:

Background

In November 2021, staff reported to Council that the City had virtually no City-owned employment lands available for sale. This ongoing shortage has remained a significant concern, prompting Council to direct staff to develop policy options to increase the City's supply of employment lands quickly and appropriately.

In response, staff presented a report on February 21, 2023 (Report 23-079), outlining how best to bring the City owned St. Lawrence Business Park (SLBP) expansion lands into the City's employment land inventory. Although the City owns 90 acres at this location, only 60 acres were identified as developable in order to preserve Butternut Creek and its ecological functions. These lands are also directly adjacent to the Indigenous Food Sovereignty Garden Group (IFSGG) to the north.

During the February 2023 meeting, delegations from the IFSGG and partners emphasized the need for a "shovel-worthy" rather than "shovel-ready" approach, calling for development that is environmentally responsible and culturally sensitive to the adjacent IFSGG lands. In response, Council directed staff to undertake a community and Indigenous engagement process and report back with recommendations for advancing the SLBP expansion lands in a manner that aligns with shovel-worthy principles.

As directed, staff have been engaging with the Indigenous Food Sovereignty Garden Group (IFSGG) since February 2023 to co-develop a Shovel-Worthy Development Framework for the SLBP expansion lands.

On January 23, 2024, through Report Number 24-070, staff provided Council with an update on engagement with the IFSGG and progress on the Framework. At that time Council endorsed the draft Shovel-Worthy Development Framework in principle. Council also directed staff to initiate the *Planning Act* process to bring the expansion lands into the urban boundary and apply suitable land use designations and zoning. Council approved the following recommendation:

> **That** Council direct staff to initiate applications for an amendment to the City of Kingston Official Plan and Kingston Zoning By-Law Number 2022-62 to facilitate an adjustment of the urban boundary and to re-designate and rezone the St. Lawrence Business Park Expansion Lands to bring them into the City's employment lands inventory; and
>
> **That** Council endorse in principle the Shovel-Worthy Development Framework, attached as Exhibit B to Report Number 24-070, and staff will continue to work with partners to refine the model and report back to Council with an update on the Framework and proposed development plans for the expansion lands.

Engagement with the members of the IFSGG

Following the February 21, 2023, Council meeting, staff from Business, Real Estate & Environment (BREE) engaged extensively with IFSGG members and partners through numerous virtual and in person meetings. Recognizing the need for technical expertise, the City retained SpruceLab Inc. and J.L. Richards & Associates Limited (JLR) in May 2023.

SpruceLab - an Indigenous and women-owned landscape planning and urban design consultancy with expertise in Indigenous engagement and green infrastructure - was recommended by the IFSGG.

SpruceLab presented various themes and priorities in June 2023, followed by visioning exercises in late 2023. The draft framework was developed through meetings with IFSGG and partners between February and April 2023, culminating in a draft presented in a staff report to Council dated January 23, 2024, Report Number 24-070. At this meeting, staff provided details of the engagement held to that date. Staff also provided details on the Shovel-Worthy Development Framework - the vision statement and the principles. The proposed concept plan for the draft plan of subdivision was also discussed. Council endorsed the draft Shovel-Worthy Development Framework in principle at this meeting.

Following Council's endorsement, staff, IFSGG and SpruceLab continued refining and finalizing the Framework. Concurrently, staff started working on the Official Plan amendment, Zoning By-Law and draft plan of subdivision applications, collectively called the "Planning Applications".

The Framework was also circulated to 11 First Nations for their awareness and comments. Staff received a response from Alderville First Nations and will continue ongoing dialogue with them.

Shovel Worthy Development Framework

The collaborative work of the consultants, staff, IFSGG resulted in the Shovel-Worthy Development Framework for the St. Lawrence Business Park Lands which is attached as Exhibit B to this report.

As this is the first example in Kingston, the Framework is intended as a "living document" that will be adapted overtime based upon lessons learned, new science and approaches. Additionally, requirements for accessibility, safety, and technical viability are not included as objectives because they are understood to be inherent requirements of all plans.

The following is a high-level overview of the Shovel-Worthy Development Framework, see Exhibit B for the full document.

Vision statement

A shovel-worthy business park seeks to achieve a seven generations stewardship model that encourages people to consider their responsibilities in caring for land, water, air, and community

– now and for the next seven generations (a shared wisdom of Indigenous Knowledge) while also fulfilling the core purpose of the business park in its form and function.

Principles:

1. Ecological Health and Sustainability

2. Economic Development and Financial Viability

3. Community Health and Well-being

4. Indigenous Placekeeping

The Planning Act Application

The SLBP expansion lands are located outside of the urban boundary, designated Rural Lands in the City's Official Plan and zoned General Rural Area Zone (RU) in Kingston Zoning By-Law Number 2022-62. As per Council's direction at the January 23, 2024 meeting, staff initiated the planning process and retained Fotenn Planning and Design, and Forefront Engineering to prepare the Planning Act application. The application's purpose is to bring the lands into the urban boundary and allow commercial, business park industrial, and open space uses, as well as divide the subject property into blocks and create a new road.

The *Planning Act* application have been developed through the lens of the Shovel-Worthy Development Framework.

Since their submission, a Community Meeting was held on June 19, 2025, and there have been three rounds of technical review to address detailed engineering, planning, transportation, and environmental comments. A recommendation on the file was originally scheduled for the December 5, 2025, Planning Committee, however IFSGG and members of the public requested deferral until the draft Natural Heritage Study (NHS) Report being prepared by North South Environmental (NSE) is released to the public. For transparency and to ensure that future planning decisions related to the SLBP expansion are aligned with the NHS report, the Planning Act applications were deferred via the following motion at December 5, 2025 committee meeting:

> **That** the application for the City-Initiated Official Plan & Zoning By-Law Amendment and Draft Plan of Subdivision (File Number D35-003-2025) submitted by Fotenn Planning + Design on behalf of the City of Kingston be deferred until the draft Natural Heritage Study (NHS) Report being prepared by North South Environmental (NSE), which includes policy recommendations for consideration, complete mapping (including Urban Boundary Expansions application lands) is released to the public early in 2026, allowing the public time to review the draft NHS report and for more consideration to be given to the concerns raised by the public relating to the City-Initiated Official Plan & Zoning By-Law Amendment and Draft Plan of Subdivision applications.

The NHS report is expected to be released in early March 2026. The Planning Applications are anticipated to be presented to the Planning Committee on March 26, 2026.

Draft Plan of Subdivision – Key Design Strategies

The site is largely undeveloped, with agricultural use in the west and natural vegetation near Butternut Creek. The following design strategies were identified essential for a shovel-worthy development - these informed the draft plan. The objectives of these design strategies are to support biodiversity, improve air quality, reduce urban heat island effects from the proposed development, improve water balance, and create recreational and educational opportunities.

- Ecological Corridor - A naturalized connection for non-humans linking the Butternut Creek to the east with the IFSG to support biodiversity by creating habitat, foraging opportunities, refuge for small animals, birds, pollinators, insects etc. Initially a 20-metre-wide green space or ecological corridor was proposed, however upon further review, the width of the proposed corridor is increased to 30.0 metres. The features in this corridor may include a stone dust pathway, meandering swale for stormwater drainage, and a diverse range of native plantings.

  Proposed Open Space zoning with an exception zone overlay will restrict the uses within the block to its intended uses of stormwater management, passive recreation, and naturalization.

  To provide connectivity between the expansion lands and the lands to the north, a road will be crossing the ecological corridor. The road crossing will include a culvert or similar structure to maintain hydrological and ecological connectivity of the ecological corridor.

- Rural Character Road Design: The extension of Innovation Drive through the site is planned to balance a rural profile, with grassed swales for stormwater management, and sidewalks for improved pedestrian mobility.

- Increased Soft Landscaping: 15% to 20% of the total site is proposed as municipally owned softscape area, relative to 3% to 5% if this business park was designed in a conventional manner. In addition to municipally owned softscape area, the individual Business Park designated Blocks within the site will also have an increased landscaped open space requirement of 20%.

- Stormwater Management: Considering the natural grading of the lands, two stormwater ponds are proposed on either side of the site proposed integrated with the ecological corridor. The ponds and swale in the ecological corridor will support aquatic vegetation, improve water balance, and offer passive recreational opportunities via pedestrian paths.

Next Steps

The NHS report is expected to be released to public in early March. The Planning Applications are anticipated to be presented to the Planning Committee on March 26, 2026.

If the applications are approved, BREE staff will submit an application for Final Plan of Subdivision in order to finalize the details of the subdivision design. Site Plan Control applications, along with the associated agreements, would also be required for the development of the individual blocks to be sold to future business park purchasers.

BREE staff have also initiated Phase 2 of the Shovel Worthy Development Framework – the Site Development Guidelines. This work, started in July 2025, is being led by a team of landscape planners and urban designers at Fotenn Planning and Design, in consultation with IFSGG. These guidelines will inform both the Final Plan of Subdivision design as well as any future development on individual blocks by business park purchasers. Staff will continue to engage with IFSG during the Final Plan of Subdivision design stage. Additional consultation with First Nations will be undertaken during the design stage, particularly regarding Indigenous Placekeeping principle of the Framework.

The City is currently developing a new Official Plan, the first draft was released in August 2025, and Planning Services staff are now preparing the second draft. As the primary developer of industrial and business park lands, the City has an opportunity to lead by example, using the Shovel-Worthy Development Framework. Accordingly, the new Official Plan will incorporate the vision statement, principles of shovel-worthy development, and related policies. These will guide the application of the Framework to the future development of City-owned industrial and business park lands.

The lands at 1501 Highway 15, located to the north and east of the IFSG, as well as the lands at 1623 Highway 15, are the subject of Official Plan amendment applications, requesting inclusion in a future urban boundary expansion for the development of a new residential community as part of the City's New Official Plan. Should Planning Staff be supportive of including the portion of these lands located west of Butternut Creek within the proposed future urban boundary expansion, the applicants will be required to continue the ecological corridor along the southern lot line of these properties, similar to that proposed on the SLBP expansion lands, so that the corridor is doubled in width (total corridor width would be 60 metres). Staff will continue to work with the adjacent landowners to advocate for the widening of this ecological corridor.

Existing Policy/By-Law:

Provincial Planning Statement, 2024

City of Kingston Official Plan

City of Kingston Zoning By-Law Number 2022-62

Financial Considerations:

At this point in the process there are no financial considerations. Budget has already been allocated to develop and service the Employment Lands.

Contacts:

Saru Bajwa, Land Development Manager, 613-546-4291 extension 3123

Other City of Kingston Staff Consulted:

James Bar, Manager, Development Approvals

Sukriti Agarwal, Manager, Policy Planning

Exhibits Attached:

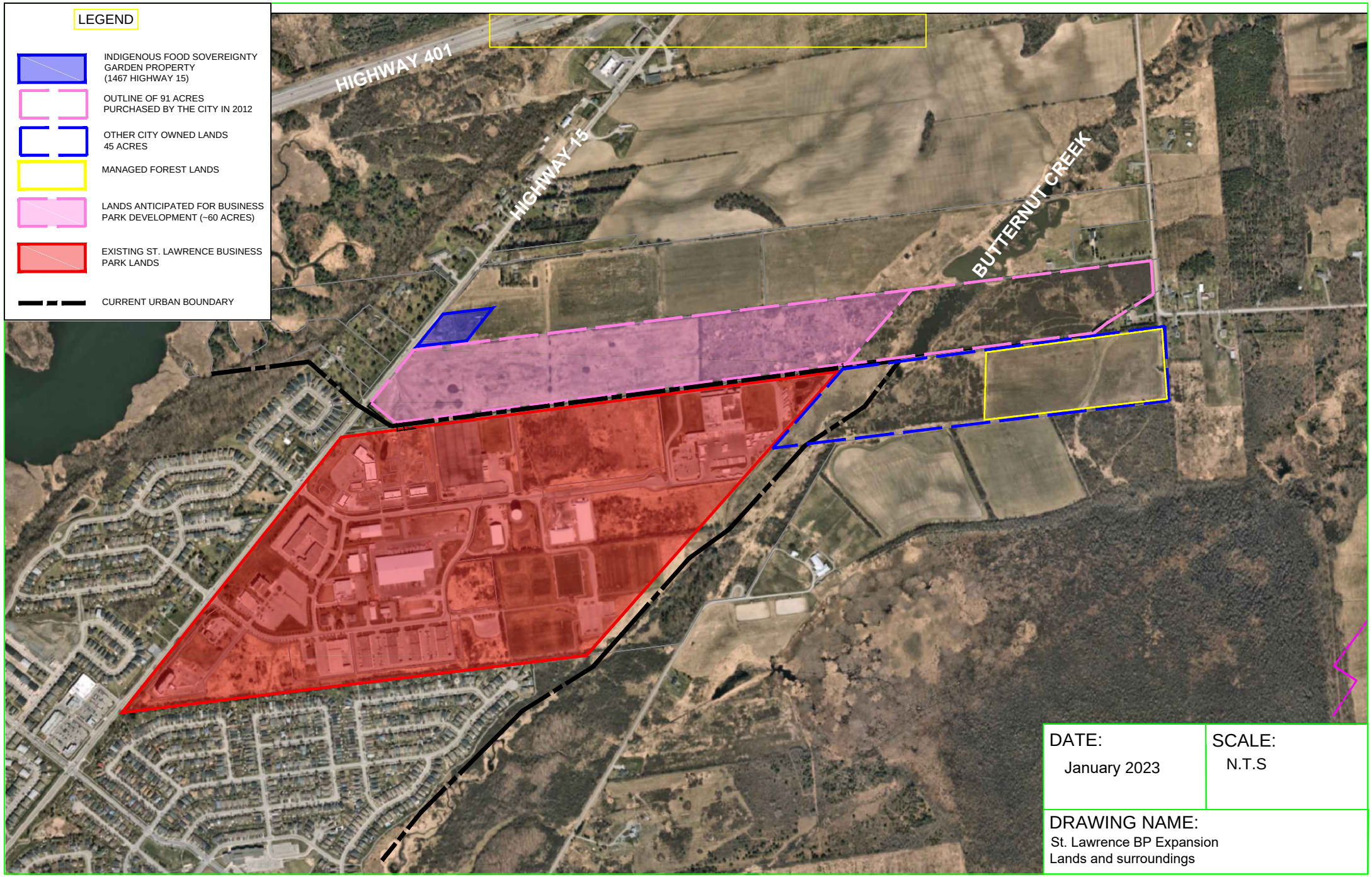
Exhibit A – St. Lawrence Business Park Expansion Lands

Exhibit B – Shovel Worthy Development Framework

Exhibit C – Draft Site Development Guidelines

Exhibit A
Report Number 26-054

St. Lawrence Business Park Expansion Lands and surroundings



City of Kingston | **St. Lawrence Business Park Expansion Lands**

Shovel-worthy Development Framework

November 20, 2025

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1. BACKGROUND

The City of Kingston's St. Lawrence Business Park is located on Highway 15 in the east end of the City, approximately 2 km south of Highway 401. It is home to many businesses including distribution, logistics, scientific, medical, and technical services plus commercial uses. These lands "*…are vital to the local economic development growth and job creation of Kingston. The City ensures the availability of serviced industrial land for immediate development and secures land for future growth." (City of Kingston).*

The lands north of the St. Lawrence business park were purchased by the City in 2012 as a planned northerly expansion of the existing business park. The actual land holding of the City is 90 acres, and spans across Butternut Creek. However, it was decided that the developable parcel would be reduced to 60 acres to preserve Butternut Creek and its environmental functions. This linear strip of land is also adjacent to the existing Indigenous Food Sovereignty Garden Group (IFSGG) lands, located north-west of the site.

On February 21, 2023, the proposal to develop the expansion lands into a business park was identified in a Council Report. At the February 2023 Kingston Council meeting, the IFSGG and community partners requested that the city consider a "shovel-worthy" versus a "shovel-ready" approach to the expansion lands. There was a desire to ensure that the new lands would be sensitive and respond to the abutting lands of the Indigenous Food Sovereignty Garden Group, while respecting the local ecology of the area, including Butternut Creek to the east.

IFSGG Garden

Little Forest

Expansion Lands

Expansion Lands

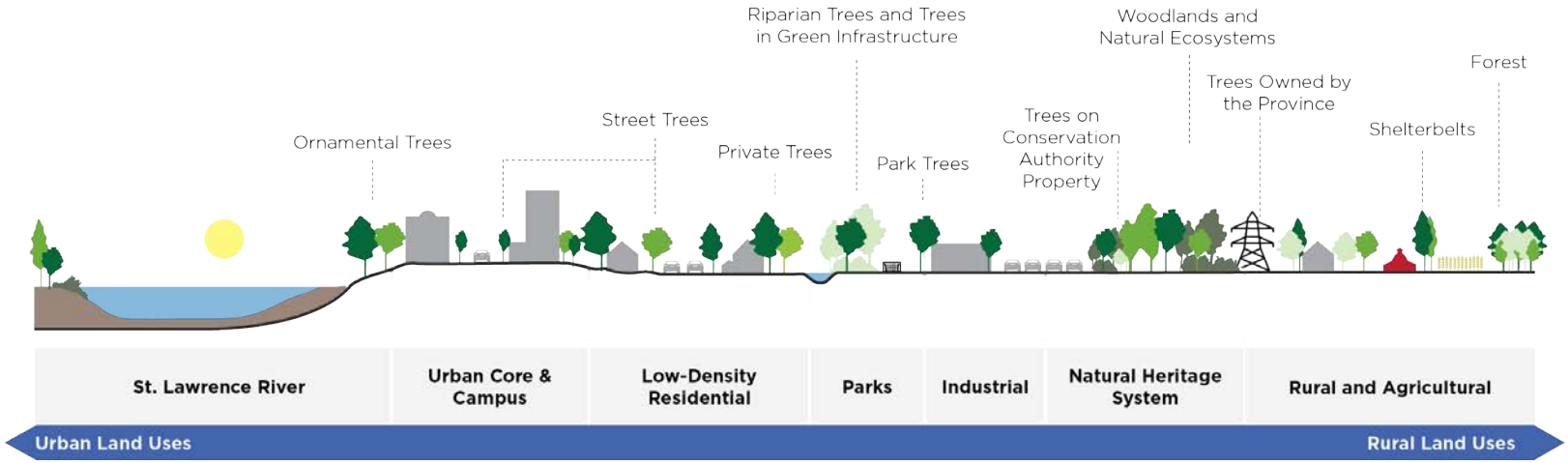
2. INTRODUCTION

To support the proposal to expand the business park, the City's real estate team engaged SpruceLab Inc., JL Richards & Associates Limited and Greenscale Inc. to undertake community engagement, research, and a technical analysis of the proposed expansion. This included an evaluation of the site's context, including relationships and potential impacts to adjacent lands, such as the Indigenous Food Sovereignty Garden Group (IFSGG). It also involved an archaeological study and a natural heritage study to understand the cultural and natural history of the lands.

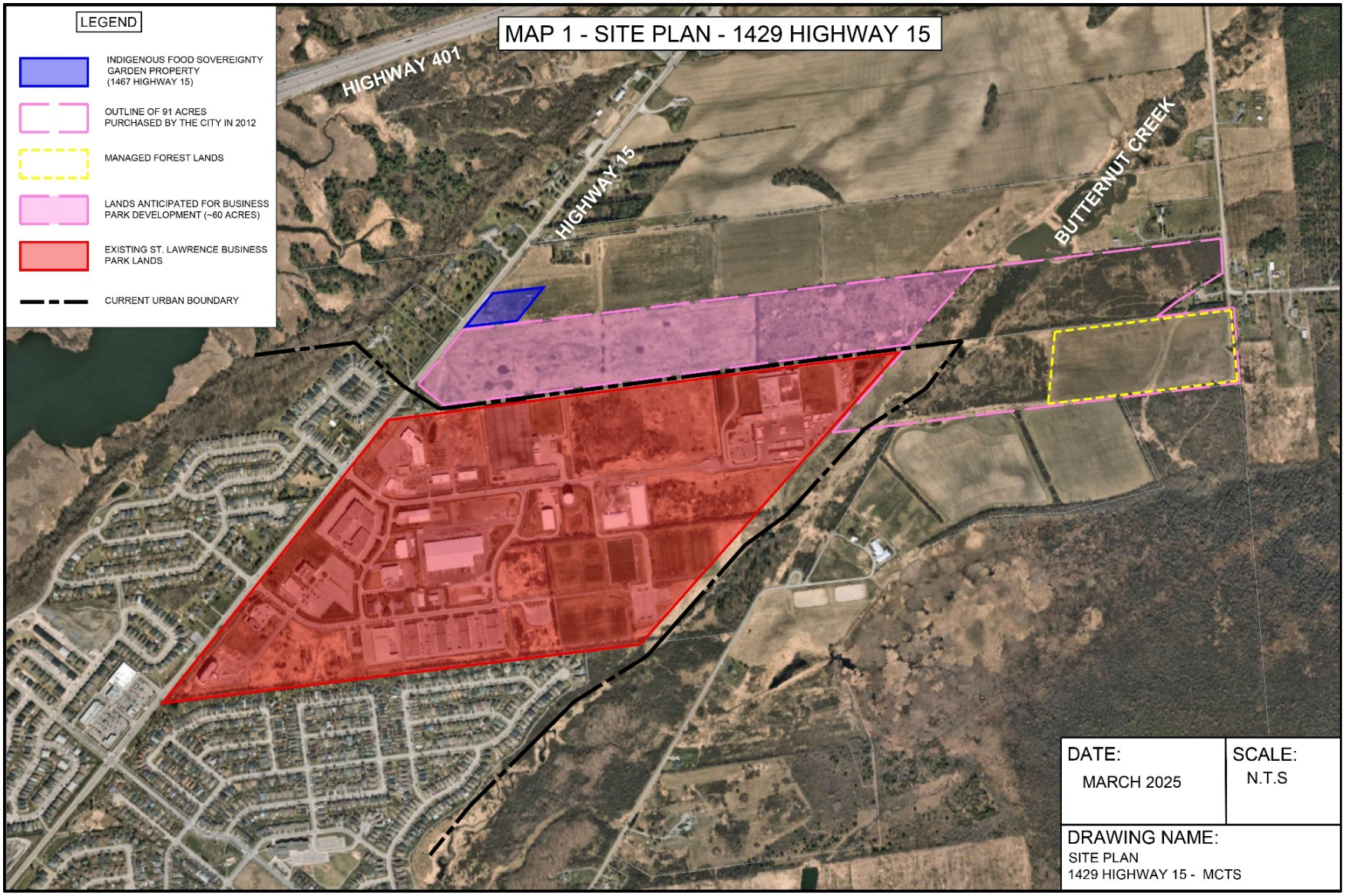
This document was prepared by SpruceLab for discussion purposes with the City and the IFSGG to help advance the project. It is intended to support the creation of a "shovel-worthy" concept plan for the business park expansion lands, in a way that respects Indigenous knowledge, while helping to inform future development. In addition, it offers a suggested new model for the city: an evaluation framework for business park expansion lands that embody an "eco-business park" approach.

Much of the information in this document was generated in collaboration, ongoing dialogue, and reflection with the project collaborators from May 2023 to 2025. Additionally, a case study analysis was undertaken by SpruceLab as background research to support this work (see Appendix C).

Following further review by the City and the IFSGG, the understanding is that this document will be advanced through internal discussions with City stakeholders to better align with City systems, programs, and initiatives, and to improve upon what is suggested herein. While this document focuses on sustainable developments to support an "eco-business park" model, the use and impacts of this evaluation framework may be farther reaching across other lands where the city has investments and land to steward.



Graphic showing Kingston's urban forest and landscape connectivity (Image: City of Kingston)



Aerial photo of St. Lawrence Business Park, Expansion lands and IFSGG lands. (Image: City of Kingston)

3. SHOVEL-WORTHY PRINCIPLES FOR BUSINESS PARKS

Vision Statement

A shovel-worthy business park seeks to achieve a Seven Generations stewardship model, while fulfilling the core purpose of the business park in its form and function.

The Guidelines reflect urban design best practices and are inspired by the ancient Haudenosaunee Seven Generations Principle (which has it's origins in the Great Law of Peace, c. 1142 - 1500 AD (as shared by Breanne Smith, in her article on this subject for The Indigenous Foundation, where she writes ".At its core, the Seven Generations Principle teaches that the decisions we make today should create a sustainable world for the seven generations that follow." This principle is now commonly supported by Indigenous Nations around the world. Anishinaabe Peoples also share an understanding of the importance of acknowledging seven generations of ancestors and the important work they did to leave the world for the seven generations that follow, as a relationship that is based in love and responsibility, and call this "aanikobijigan" to mean this interconnectedness of these relations. This understanding is intended to inspire and encourage a holistic, integrated, and innovative site design for the business park into the future.

Additionally, the Anishinaabe Teachings of the Seven Grandfathers are important considerations that should be acknowledged, and to help inform the planning, designs and decision-making for the business park. They are understood as follows: Truth, Humility, Respect, Love, Honesty, Courage, and Wisdom. There will be times when certain ones of these seven will be more significant than others, for example, in considering ecological connectivity for all creatures, it will be critical to consider love of and respect for "All Our Relatives", the other-than-human beings that share our world."

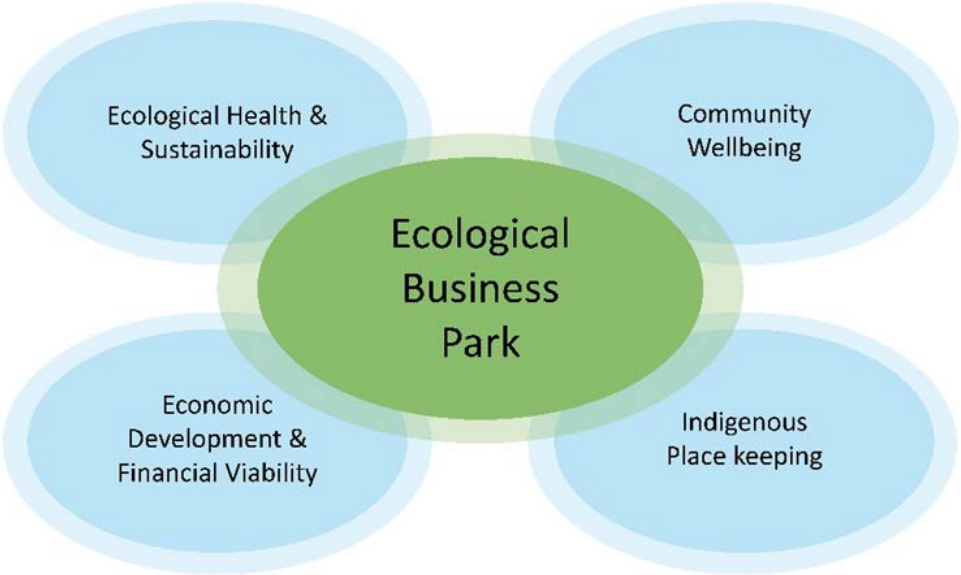
The Dish With One Spoon wampum belt reflects these foundational teachings, and is a covenant between the Haudenosaunee and the Anishinaabeg Peoples to share their traditional territories and to ensure these lands and waters would be respected and protected for their sacredness and their abundant gifts of sustenance for humans and all creatures. Today, this translates into protecting the ecological systems that the City of Kingston's citizens and all living things rely on, through the preservation of natural systems, the creation of ecological corridors, and the development of projects that are deemed "shovel-worthy", and not merely "shovel-ready".

(Image above: "Seven Generations" sculpture by Frederick Franck (Photo: Times Herald-Record).

Document Structure

This document presents an approach for the economic development of business park lands that are in keeping with the above vision statement. The following four principles are proposed as foundational to achieving this goal and were informed by the in-depth engagement undertaken with IFSGG and the City by SpruceLab in 2023. They are also supported by the case study analysis of relevant “eco-business park” projects and similar evaluation frameworks (refer to Appendix).

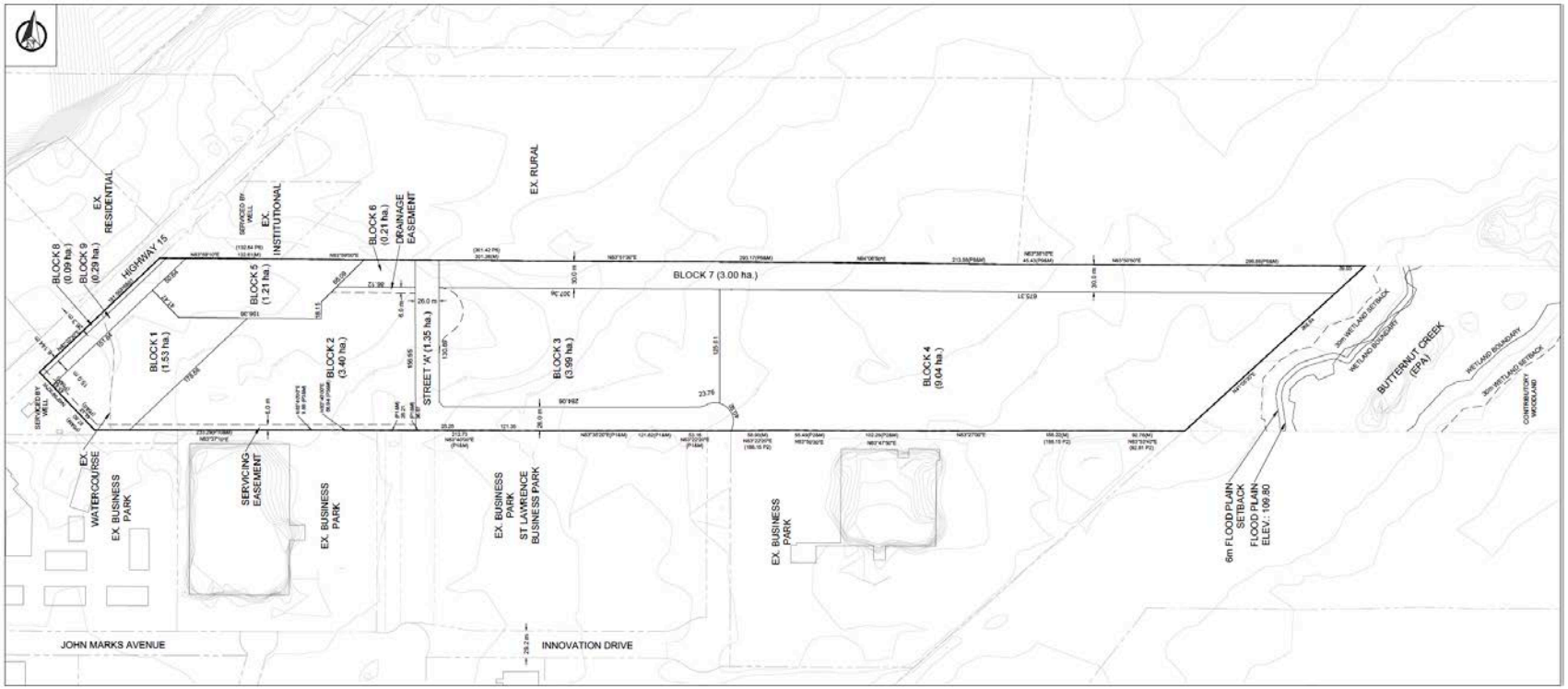
The four principles are distinct enough to warrant that they be addressed separately, without any hierarchy. It is also understood that there are many areas where these principles intersect and are mutually supportive. For this evaluation framework to respond successfully to the City of Kingston’s changing needs (e.g., climate change and population growth modelling), it is essential that approaches towards innovation and “learning-to-adapt" are also consistently applied. These principles are: Ecological Health and Sustainability, Economic Development and Financial Viability, Community Well-being, and; Indigenous Placekeeping.



In considering the existing site conditions and the future needs and function of the proposed business park, the concept plan developed by the City of Kingston for the expansion lands must be informed by these principles in a way that is relevant and measurable. By evaluating the concept plan through this framework, it will create a strong underlying foundation for future shovel-worthy developments at the site/ lot level, where urban design guidelines will be developed to help to guide this work.

Each of these principles requires a set of key objectives with realistic strategies to help achieve them, with work that is grounded in research and seeks to achieve a “made in Kingston” approach. Considerations for sustainable business parks and industrial lands are emerging. As this is the first example in Kingston, it is important to appreciate that this framework is a ‘living document’ that will be adapted overtime based upon lessons learned, new science and approaches. Additionally, requirements for accessibility, safety, and technical viability are not included as objectives because they are understood to be inherent requirements of all plans. All this information is formatted into an Evaluation Checklist, which can be found at the end of this report as Appendix A – Shovel-worthy Evaluation Framework.

The Shovel-worthy principles begin with a description of the principle. This is followed by key objectives for it to be realized. The “Future Site Design Guidelines for Consideration” chart is provided as a tie-in to the next phase of the expansion lands project. This section touches upon topics to consider in the preparation of site design guidelines for the development of the development parcels that will be privately sold to businesses. The last section of each principle provides additional resources that provide information to learn more about the respective topic.



Concept Plan of proposed Expansion lands (red outline), and IFSGG lands (grey outline). (Image: Forefront Engineering)

3.1 PRINCIPLE #1: ECOLOGICAL HEALTH AND SUSTAINABILITY

Description

Biodiversity is prioritized and sustainability is central to all decisions related to land development by including ecological corridors and habitat creation (e.g., linking Butternut Creek to the IFSGG site). Considerations are holistic, adaptive, far-sighted, and embrace innovative design solutions that work with the systems of Mother Earth. Lowering the carbon footprint of the project and an overall commitment to planning for learning and adapting includes futureproofing and creating capacity, to respond effectively and efficiently to climate change stressors and to population growth for Kingston. Ideally, the business park should exemplify the City of Kingston's Green Standard Community Improvement Plan.

The term 'Nature based Infrastructure Solutions' is an umbrella term which encompasses a broad range of strategies used to address societal and environmental challenges utilising natural factors. There is no one universal definition for these however the International Union for Conservation of Nature (IUCN) defines them as 'actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, simultaneously benefiting people and nature.'

The following terms are known be used interchangeably dependant on their context, to represent and summarise these approaches.

- Nature based Infrastructure Solutions
- Low Impact Development (LID)
- Green Infrastructure
- Natural Infrastructure

The current City of Kingston Official Plan (July 2025) and the Provincial Policy Statement both define Green Infrastructure in very similar matters (see below). The Provincial Policy Statement also defines Low Impact Development. The proposed Official Plan document is currently in progress and will reflect any changes to the definition with a later revision to the working copy.

Provincial Policy Statement: "Green infrastructure" means natural and human- made elements that provide ecological and hydrological functions and processes. *Green infrastructure* can include components

such as natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs.

"Low impact development" means an approach to stormwater management that seeks to manage rain and other precipitation as close as possible to where it falls to mitigate the impacts of increased runoff and stormwater pollution. It typically includes a set of site design strategies and distributed, small-scale structural practices to mimic the natural hydrology to the greatest extent possible through infiltration, evapotranspiration, harvesting, filtration, and detention of stormwater. *Low impact development* can include, for example: bio- swales, vegetated areas at the edge of paved surfaces, permeable pavement, rain gardens, green roofs, and exfiltration systems.

The City of Kingston's Official Plan uses the term "green infrastructure", and defines it as: "Natural and human-made elements that provide ecological and hydrological functions and processes that may include components such as *natural heritage features and areas*, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs."

This document acknowledges that in addition to the above, there is a clear need to integrate Indigenous knowledge (also referred to as Traditional Ecological Knowledge) into the work and language around "nature-based solutions", as this is knowledge that has evolved over many thousands of years from observing, learning from, and innovating with natural systems, by the Indigenous Peoples of those lands. The view of nature as "resources" from a human-centric position of usefulness, or of working with nature to the advantage of what humans need, is colonial and contradictory to an Indigenous world view of relating to nature as Mother Earth. It is important here to draw attention to this distinction, and to challenge the predominant colonial mind-set that underlies much of development, while sharing these definitions above as having endorsement by various levels of government. Through a "Etuaptmumk / Two-eyed Seeing" model (a concept developed by Mi'kmaq Elders Albert and Murdena Marshall) we can seek to take the best of both worlds, and to consider a definition that respects both ways of knowing and being.

Objectives and strategies for the concept plan

Objective: Climate Resilience

Strategies:

- Design landscapes and green infrastructure ("nature-based solutions") to respond and adapt to climate change
- Plan for a landscape that decreases urban heat, and helps address a changing climate with extreme weather events
- Protect and enhance natural features and functions to support the ecology of the business park and surrounding lands
- Respect the soil during development to protect soil health and preserve the ability of soil for carbon capture

Objective: Enhanced Biodiversity

Strategies:

- Prioritize native plant communities in the design of the landscapes / softscapes of the Business Park.
- Provide landscape spaces for native pollinator species (bees, butterflies, birds, etc.)
- Provide landscapes that support wildlife habitat and food throughout the seasons
- Design open space areas and habitat patches throughout the business park that could serve as connections (minimize barriers to wildlife movement) and provide food and seed sources for movement of wildlife, birds, bats, insects, etc.

Objective: Landscape Resilience

Strategies:

- Ensure that ecological corridor and road network function to support wildlife habitats suitable for business parks, which are complementary to the ecological lands of Butternut Creek
- Provide a minimum of 20% natural / soft landscape space within the business park to be maintained as public lands
- Design open spaces and habitat areas throughout that could serve as stepping stones and seed sources for movement of native species (e.g. insects, birds, plants, etc.)
- Habitats are restored to support ecosystems and functions, including the ability of wildlife to navigate within the landscape
- Design business park to function as a cohesive place that is not compartmentalized
- Create stormwater management areas that can also provide passive recreational space (e.g. walking, sitting)

Objective: Water Balance

Strategies:

- Create nature-based stormwater features to capture infiltration, and to support wildlife habitat
- Direct stormwater runoff to the stormwater management pond, natural spaces, and soil volumes for tree plantings
- Adopt green stormwater infrastructure (“low impact development” or LID) where possible (e.g. grass swales that will slow water runoff so it can infiltrate to recharge the water table), and design the landscape to improve storage capacity for heavy rains while also getting water to trees and plant material
- Re-use and recycle water where possible
- Minimize hardscaped areas to increase infiltration of stormwater runoff into the ground
- Operation and maintenance manuals for stormwater management ponds will be designed to ensure that the facility continues to have a thriving ecosystem throughout its’ lifecycle.
- Ensure that soil is protected and conserved during the construction of the Business Park to maintain soil health, where feasible”

POTENTIAL SITE DESIGN GUIDELINES FOR PRIVATE LANDS:

Waste Reduction

- ✓ Recycling
- ✓ Composting
- ✓ Up-cycling, material re-use and waste diversion

Air Quality

- ✓ Reduction of fossil fuel emissions
- ✓ Control of dust and air quality emissions
- ✓ Mitigation of noise and vibration impacts on adjacent lands
- ✓ Life-cycle carbon assessments, including sourcing local materials where possible
- ✓ Use of materials that do not contribute to urban heat (e.g. high albedo (lighter coloured surfaces), reduction of dark asphalt paved surfaces)
- ✓ Protect nature to preserve carbon sequestration ability (e.g. soil conservation, growing conditions for "little forests")

Sustainable buildings and reduced greenhouse gas emissions

- ✓ Renewable energy (e.g. rooftop solar panels, green roofs on buildings, geothermal heating)
- ✓ Reduced energy consumption – use of energy efficient fixtures, appliances, etc.
- ✓ Reduce water consumption
- ✓ Energy-efficient buildings
- ✓ Energy storage and distribution - for energy systems providing heat and power
- ✓ Bird-friendly architectural design (e.g. specialized window treatments to decrease bird collisions)

Sustainable landscapes

- ✓ Creation of "little forests" between parcels as linear connections to the trail system and ecological corridor
- ✓ Enhance biodiversity with the planting of native plants, especially pollinator species and designing for winter habitat
- ✓ Maintain a minimum of 20% natural areas / greenspaces to help cool the environment and to improve water balance
- ✓ Reduction of water use for landscapes, also known as "xeriscaping"
- ✓ Design low maintenance landscapes to reduce energy use (e.g. "low mow" in place of traditional lawn areas)
- ✓ Use of Low Impact Development (LID) techniques
- ✓ Provide permeable paving where possible, to reduce the amount of impervious surfaces
- ✓ Interconnected ecological systems through supportive landscape linkages

Outdoor Lighting

- ✓ Use of night sky compliant lights
- ✓ Use of lights with cut-off shields to prevent light spillage into natural areas
- ✓ Use of energy efficient/solar powered lights

This document complements the recommendations for urban forest and softscape targets found in the City of Kingston's Official Plan, Forest Management Strategy and the Forest Management Strategy and to be revised to reflect updated versions of these documents once published.

The Forest Management Strategy is being created to support the City in fulfilling Strategic Plan Action 2.3.3, which targets a 30% urban and rural tree canopy by 2035.

In addition, The City of Kingston is also currently working to obtain its Bird Friendly City Certification. Nature Canada has created this initiative to help mitigate the impacts that cities and urban developments have on bird populations. Below is a list of objectives proposed by the initiative:

- Key threats to birds are effectively mitigated;
- Nature is restored so native bird populations can thrive;
- Residents are actively engaged in admiring and monitoring local bird populations;
- Organizations are creating events to protect birds;
- Progressive municipal policies are created to protect urban bird populations; and
- A Bird Team has been created to oversee and lead these initiatives.

Additional Resources

Existing evidence-based certification programs for development of designs which promote ecological health and sustainability include:

Toronto Green Standard v4
CAGBC – Canadian Green Building Council
Bird Friendly City Certification Report
Natural Heritage Study – Get Involved Kingston
Stormwater Management Planning and Design Manual
Forest Management Strategy – Get Involved Kingston
Official Plan – Get Involved Kingston

3.2 PRINCIPLE #2: ECONOMIC DEVELOPMENT AND FINANCIAL VIABILITY

Description

Business Park lands play a vital role in local economic development and job creation. The City of Kingston therefore needs to ensure the availability of serviced business parks are functional and to cater to a diversity of business types. The development of a business park requires large financial investment which must be recouped by sale of land while also ensuring land prices are not above the market rate as land sold/marketed above market price can negatively impact economic development. Hence affordability is essential. The recouped investment is again invested in the development of the future business park, to ensure the funds are recycled and the industrial reserve fund is self-sustainable and not dependent on property tax dollars. Therefore, to be shovel worthy there needs to find a balance between investment and lot prices, while ensuring a balance between economic priorities and environmental considerations.

Objectives and strategies for the concept plan

Objective: Recoup Investment

Strategies:

- Total anticipated development costs should break even on investment; a reasonable margin between anticipated cost and projected purchase price is important to address contingencies and unknowns related to land development.
- The sale price of serviced land must offer competitive prices and be aligned with the market value.
- Provide commercial uses along Highway 15 that cater to both the community and the business park, to attract revenue.
- Supporting green initiatives on private lands requires additional investment, need for financial incentive programs; and an evaluation program with reporting of metrics required

Objective: Functionality

Strategies:

- The road layout informs the servicing layout, as services are typically installed within the right-of-way. To be efficient, maximum lots should be serviced along a minimal road length which serves the dual purpose of reducing cost as well as hard surfaces.
- Two entry/exit points to the site are important for efficient traffic movement and fire route access: One from Highway 15, and the other to connect to the existing business park.
- Provide an efficient servicing layout which includes:
    - The ability to loop watermain service lines.
    - Sanitary discharge that follows existing grades, which generally drains towards Highway 15.
    - Storm drainage that follows existing grades (i.e., 70% of the site slopes towards Highway 15, and 30% slopes easterly towards Butternut Creek)

Objective: Affordability

Strategies:

- Deliver “ready to develop” lots, i.e. pre-serviced parcels of land with appropriate zoning to allow minimum investment, effort and turnaround time for planning approvals and lot development.
- Design of business parks that considers the needs of the future purchasers/businesses while also offering affordable sale prices at present.

Objective: Local Economic Development

Strategies:

- Provide a variety of parcel sizes to attract businesses of varied sizes and uses, for an economically diverse business park.
- Encourage businesses to locate in the park that support other existing businesses in and around Kingston, including providing industrial matchmaking opportunities.
- Encourage the creation of quality jobs for Kingston and area residents.
- Market the "eco-park business park model" to attract companies that support values of ecology, community, etc., thereby creating synergies within the business park community.

POTENTIAL SITE DESIGN GUIDELINES FOR PRIVATE LANDS:

- ✓ Design built form to be adaptable as the business grows and evolve over time
- ✓ Encourage design of green infrastructure, green energy sources and green building standards, where possible
- ✓ Design low-maintenance landscapes to reduce maintenance costs
- ✓ City to consider financial incentive programs to support the creation of green initiatives noted above
- ✓ Recovery of waste heat to save on energy costs

Additional Resources

Below are examples of economic models that are supportive of enhanced environmental and social benefits in projects:

Triple Bottom Line

Sustainable Development Goals- United Nations

Life Cycle Triple Bottom Line Cost Analysis of High Performance Building Investments – 2020 Case Studies

3.3 PRINCIPLE #3: COMMUNITY HEALTH AND WELL-BEING

Description

Developments are designed with the needs of the community in mind, and purposeful investments are made to develop high quality places to live, work, learn and play, especially when informed by community engagement. Well-being is foundational for a livable city – and every choice made affects future generations (See: "The Infrastructure of Wellbeing"). The built environment shapes our sense of who we are, what we are connected to, and can help to create a sense of belonging. Opportunities for learning about a place can help to enrich this connection. Places must be safe and accessible to all ages, abilities, and socio-economic status.

Objectives and strategies for the concept plan

Objective: Interface with Community

Strategies:

- Design each park space to have strong visual presence from the street to create a sense of place. For example, provide an entry feature, wayfinding/ signage, and enhanced landscape spaces
- Create a permeable boundary to the business park so that it integrates with the surrounding neighbourhood including:
    - Sitting and resting areas
    - Pathways internal to the park that connect to the surrounding neighbourhood and the IFSGG lands

Objective: Active Transportation

Strategies:

- Within the road and trail network of the business park, provide opportunities for
    - Active transportation (e.g. walking, cycling, and micro-mobility)
    - Access to public transit

Objective: Public Realm design

Strategies:

- Within the public spaces of the business park (e.g. boulevards, trails, open spaces, stormwater management pond), strive to create:
    - Design for all ages and abilities (e.g. universal access)
    - Welcoming environments that encourage a sense of belonging to a community
    - The right to roam, to forage, to harvest
    - Connections to place, the land and water, including listening/experiencing spaces of nature integrated into ecological corridors
    - Places for gathering with others, for passive recreation, play, relaxation and education

POTENTIAL SITE DESIGN GUIDELINES FOR PRIVATE LANDS:

Building design

- ✓ Encourage a high-quality building to be placed at the entrance to the business park to serve as a gateway into the park
- ✓ Ensure that building facades that are visible from the public roads are animated with high quality building materials, colours, and architectural design
- ✓ Provide ample glazing where possible for facades facing public roads and public spaces to improve eyes on the street and eyes on the park

Site design

- ✓ Screen the view of garbage and loading areas from the public realm to enhance the pedestrian experience
- ✓ Orient buildings and outdoor spaces to capture sunlight, based upon the function of the space
- ✓ Provide landscape areas within large parking lots to reduce the heat island effect
- ✓ Design parking areas to encourage car-pooling, EV parking, and bike parking

Landscape design

- ✓ Explore tree planting techniques to achieve a variety of tree species and canopy sizes.
- ✓ Include shaded, seating areas for employees and visitors of the business park
- ✓ Encourage a network of pedestrian and cycling routes for passive recreation and the ability to walk/ bike/ bus to work

Culture and Community

- ✓ Provide art installations on private lands
- ✓ Provide educational/interpretive information about the business, and its contributions to the eco business park

Additional Resources

Existing evidence-based certification programs that can be referred to in the development of designs:

Community Wellbeing Framework
The WELL Building Standard, WELL Version 2
International Living Future Institute
CPTED Canada
"What are the Social Determinants of Health?"
fitwel
Rick Hansen Foundation
Projects for Public Spaces

3.4 PRINCIPLE #4: INDIGENOUS PLACEKEEPING

Description

The City of Kingston is located on the traditional territories of the Anishinaabe, Haudenosaunee, and Wendat Nations and is now home to many Métis, Inuit, and people from many different First Nations. Of the Truth and Reconciliation Commission of Canada's Calls to Actions, Action #43 is quite relevant:

"We call upon federal, provincial, territorial, and municipal governments to fully adopt and implement the *United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)* as the framework for reconciliation."

There are many articles from this document that can be seen as having relevance to the development of municipal lands for a business park. For example, "Article 15: Indigenous peoples have the right to the dignity and diversity of their cultures, traditions, histories and aspirations which shall be appropriately reflected in education and public information". For the purposes of this document, it's important to stress the need for ongoing relationship building with First Nations that are connected to the Kingston area including the Algonquins of Ontario, Wendat Nation of Wendake, the Mohawks of the Bay of Quinte and Alderville First Nation to honour the interests of the Rights Holders for the area, and to work towards reconciliation.

Crawford's Purchases were made by Captain William Crawford on behalf of the Crown, and certain Indigenous peoples in October 1783, and involved the land along the north shore of eastern Lake Ontario and the St. Lawrence River.

These purchases were designed to provide land to Loyalists who fought on behalf of the British during the American Revolution, including Indigenous allies and United Empire Loyalists.

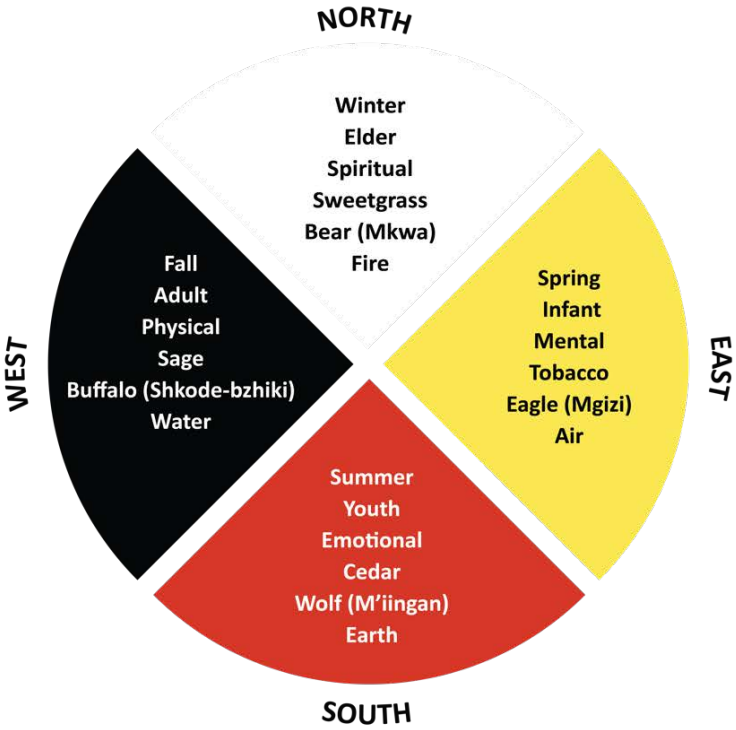
Current communities in the area include Kingston and Brockville.

An illustration of United Empire Loyalists camped at Johnstown on the shore of the St. Lawrence River. The town would eventually become the city of Cornwall. (Library and Archives Canada)

To the left is information from the Province of Ontario regarding the Crawford's Purchases that include the Kingston area.
The creation of meaningful places with interpretive art and signage with narratives specific to the Kingston area, as well as identifying opportunities for Indigenous organizations and businesses to flourish, are critical elements of shovel-worthy principles. With the guidance of First Nations Rights Holders and the support of the local Indigenous community, Indigenous placekeeping can be a genuine demonstration of efforts to work towards reparative and regenerative justice.

The Engage for Change program is an example of meaningful collaboration with the local Indigenous community to respectfully integrate Indigenous voices, language, and cultures into City of Kingston work, and to respond directly to the needs of the community. The changing of land that includes the development of public realm offers great opportunities to create space for Indigenous voices and narratives. In this work, there is also the importance of telling the "truth" as part of "truth and reconciliation" efforts, to describe how the First Peoples were harmed and displaced through colonization, and the impacts of this even today. In this document, the term "Indigenous Placekeeping" is used and is described by Wanda Della Costa, a Cree architect and professor, as follows: *"...it prioritizes the traditional and cultural setting, negotiates an expanded role of citizen experts and knowledge brokers, and utilizes Indigenous methodologies as a means of accessing local narrative."* (In: *Indigenous Placekeeping: Campus Design and Planning*, 2018, Arizona State University).

Additionally, Indigenous placekeeping can take inspiration from the guiding principles of the medicine wheel, often used by Indigenous cultures in North America as a holistic tool for teaching and healing, following an oral, storytelling approach. Working with Elders and Knowledge Holders to consider meaningful and culturally significant ideas for placekeeping could support the planning of shovel-worthy sites (e.g. seasonal teachings, spaces designed to support the four 'health' needs (spiritual, mental, emotional, physical), or planting designs that celebrate the four directions).



Example of an Ojibwe medicine wheel (Note: Nations use unique versions).

Objectives and strategies for the concept plan

Objective: Indigenous Design

Strategies:

- Art and designs by Indigenous artists located throughout the public lands of the Business Park
- Explore designs that respect and show directionality (the four sacred directions)
- Design a public realm that represents circularity, holistic, interconnected, and respects that "all voices matter"

Objective: Indigenous Narratives

Strategies:

- Prioritize land and water and the First Peoples of these lands
- Interpretive signage with storytelling narratives (e.g. Land acknowledgment and Treaty information, wampum belts, natural features such as Butternut Creek watershed)
- Supportive of land-based teachings such as Seven generations thinking, Medicine Wheel, traditional harvesting, etc.
- Celebrate the four seasons (e.g. spring planting, summer/fall harvest, etc.)

Objective: Caring for Mother Earth

Strategies:

- Stewardship agreement with All Our Relations Land Trust (e.g. to tend the medicine gardens)
- Restoration efforts to support All Our Relatives (all creatures, land, and water)
- Opportunities for Indigenous gardening practices
- Opportunities for land-based training programs (e.g. for youth, or adult land-based job skills training)

POTENTIAL SITE DESIGN GUIDELINES FOR PRIVATE LANDS:

- ✓ Provide art and designs by Indigenous artists where possible (e.g. sculptures, installations, paving art, murals, etc.)
- ✓ Provide interpretive signage with storytelling narratives (e.g. within landscape areas, art installations)
- ✓ Provide information on "Little forests" that tell the ecological / relations story (past, present, future)
- ✓ Design landscapes with native plant material

Additional Resources

National Centre for Truth and Reconciliation
First Nations Information Governance Centre
Canadian Council for Aboriginal Business
United Nations Declaration on the Rights of Indigenous Peoples Act
City of Aukland Design Manual "Te Aranga Principles",
Indigenous Business Directory

4.0 SUMMARY

The city seeks to expand their supply of industrial and business park lands and purchased the lands to the north of the existing St. Lawrence Business Park with the intention of expanding this park. Through consultation with the community including the IFSGG, it was identified that a "shovel worthy" approach to the business park expansion lands should be sought. This includes applying an ecological and community-based lens to the development of these lands. Through a series of consultations with IFSGG and community partners, four principles were identified as "shovel worthy principles." In no specific order, they are: Ecological Health and Sustainability; Economic Resilience; Community Well-being; and Indigenous placekeeping.

The evaluation chart below (Appendix B) will assist the City of Kingston in evaluating not only these expansion lands but could serve as a tool to evaluate future lands to be purchased for industrial and business park purposes. The future design guidelines suggested in this document may also provide a shovel worthy evaluation of individual parcels within the park at the site plan application stage. Lastly, the additional resources noted throughout the document and the case study analysis (Appendix C) may assist with further reading on key topics related to the ecological business park model that underly this work.

View south across the proposed St. Lawrence Business Park expansion lands, towards the existing Business Park.

APPENDIX A – GLOSSARY OF TERMS

Term	Definition / Link to website for more information
All my Relations	Interconnection is a central core of First Nations, Métis, Inuit worldviews and ways of knowing. Some First Nations call this "All my relations." This mindset reflects people who are aware that everything in the universe is connected. It also reinforces that everyone and everything has a purpose, is worthy of respect and caring, and has a place in the grand scheme of life. All my Relations
Biodiversity	All forms of life are found in one area—the variety of animals, plants, fungi, and microorganisms that make up our natural world. Each of these species and organisms work together in ecosystems, like an intricate web, to maintain balance and support life. World Wildlife Fund
Carbon footprint	A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions. The Nature Conservancy
Carbon sequestration	The uptake and storage of carbon. Trees and plants, for example, absorb carbon dioxide, release the oxygen, and store the carbon. Natural Resources Canada
Dark / Night Sky compliance	Guidelines for outdoor lighting are intended to reduce light pollution, reduce disrupting natural ecosystems, while promoting a safely lit night environment for people. Royal Astronomical Society of Canada
Ecological or Eco-business park	A community of businesses located on a common property in which businesses seek to achieve enhanced environmental, economic, and social performance through collaboration in managing environmental and resource issues. United Nations - Industrial Development Organization
Ecological corridor	Ecological corridors are areas of land and water that aim to maintain or restore ecological connectivity. They do this by allowing species to move, and natural processes to flow freely across large landscapes. Parks Canada
Ecosystem	A geographic area where plants, animals, and other organisms, as well as weather and landscapes, work together to form a bubble of life. Natural Geographic

Term	Definition / Link to website for more information
Economic Development	Programs, policies, or activities that seek to improve the economic well-being and quality of life for a community. Government of British Columbia
E.S.G.	Environmental, Social and Governance (ESG). Investopedia.com
Green infrastructure	Natural and human-made elements that provide ecological and hydrological functions and processes. Provincial policy statement, 2020 Natural vegetative systems and green technologies that collectively provide society with a multitude of economic, environmental, health, and social benefits. Green Infrastructure Ontario
Green Roof	Contained areas of vegetation such as trees, shrubs, crops, or grasses planted on top of a human-made structure. They incorporate waterproofing, root repellents, drainage, growing medium, and plants. Green roofs.org
Habitat	The natural home or environment of a plant, animal, or other organism. It provides the organism with food, water, shelter and space to survive. Habitats consist of both biotic (living) and abiotic (non-living) factors. Australian museum
Hardscaping	A landscape term referring to "hard" surface materials such as paving, fencing, retaining walls, site furnishings and structures. Hardscaping may be permeable or impermeable. The opposite term is Softscaping (see definition below).
Heat island effect (or Urban Heat Island)	Urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies. US - Environmental Protection Agency. Also see Report, "St. Lawrence Business Park Expansion Impact Scenario Report by Greenscale (Feb. 14, 2024)
Hydrology	A science dealing with the properties, distribution, and circulation of water on and below the earth's surface and in the atmosphere. Merriam-Webster dictionary
Impermeable	Does not allow water or liquid to pass through it. The opposite term is "Permeable". Vocabulary.com
Infiltration	Where water is absorbed into the soil or aggregate below the soil itself.
LID	Low Impact Development (LID) are systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration, or use of stormwater to protect water quality and associated aquatic habitat. US - Environmental Protection Agency
Native Plants	Indigenous terrestrial and aquatic species that have evolved and occur naturally in a particular region, ecosystem, and habitat. Species native to North America are recognized as those occurring on the continent prior to European settlement. US - Forest Services

Term	Definition / Link to website for more information
Naturalized / Nature-based Wetlands	Wet stormwater treatment systems that utilize natural processes involving wetland vegetation, soils, and their associated microbial assemblages to improve water quality. US - Environmental Protection Agency.
Permeable	Allows materials such as liquids to pass through. The opposite term is "Impermeable". Vocabulary.com
Place keeping	An approach to city building that prioritizes ecological, historical, and cultural relationships in the care of 'place.' It goes beyond the planning and design of public spaces to include active care and maintenance of the space. Evergreen Interview with M Hickey
Public Realm	Publicly owned streets, pathways, sidewalks, parks, publicly accessible open spaces and any public and civic building and facility where the public has access. Law Insider.com
Rain Garden	A landscaped feature that replaces an area of lawn to collect stormwater (rain and melted snow). The shallow depression has loose, deep soil that absorbs and naturally filters the runoff, preventing it from entering the storm drain system. An example of a Low Impact Development (LID) feature. Toronto Region Conservation Authority
Regeneration (Ecology)	The ability of an ecosystem – specifically, the environment and its living population, to renew and recover from damage. Wikipedia
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform, and recover from the effects of a hazard in a timely manner, including through the preservation and restoration of its essential basic structures and functions through risk management. United Nations
Restoration (Ecology)	Process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Society for Ecological Restoration
Seven Generations	Seven Generations thinking is based on an ancient Indigenous undertanding that decisions should be informed by the Knowledge shared by seven generations of ancestors, and consider the needs of the next seven generations. Seven generations
Shovel-Worthy	A development proposal that is carefully thought out to address the needs of the climate, community, and the economy. It is a response to the term "shovel ready" which merely indicates that lands are ready for development.
Softscaping	A landscape term referring to elements which are "soft," such as plant material (trees, shrubs, perennials, ground covers, sedges, grasses, etc.). It also applies to green roofs which are considered part of the landscape. The opposite term is "Hardscaping" (see definition above).
Stewardship	The activity or responsibility of protecting and being responsible for something. Britannica Dictionary

Term	Definition / Link to website for more information
SWM	Stormwater Management (SWM): Refers to rainwater and melted snow that flows over roads, parking lots, lawn, and other sites in urban areas. The practices that help to minimize the impact of polluted runoff flowing into lakes and streams and reduce the strain that stormwater places on municipal infrastructure. Toronto Region Conservation Authority.
SWM Pond	Stormwater Management (SWM) ponds collect stormwater runoff from rain and melted snow and store this water in depressed areas known as “wet ponds” (consistently wet) or “dry ponds” (temporarily wet). Part of a stormwater management system or treatment train. Ontario.ca
Sustainable	Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. International Institute for Sustainable Development
SDG	Sustainable Development Goals (SDG). Sustainable Development Goals- United Nations
TRCC	Truth and Reconciliation Commission of Canada (TRCC). Truth and Reconciliation Commission
UNDRIP	United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP). United Nations.org
Water Balance	Water balance represents the balance between inputs from rainfall and/or irrigation and the sum of evapotranspiration, stream flow, and losses to groundwater. Science direct

APPENDIX B – SHOVEL-WORTHY EVALUATION CHART

1	Ecological Health	Objectives				Implementation stage		
	Action items	I CLIMATE RESILIENCE	II ENHANCED BIO-DIVERSITY	III LANDSCAPE RESILIENCE	IV WATER BALANCE	Implementation Phase	Status (Provide rationale if not implemented)	Supporting documentation required
1.1	Provide opportunities for land stewardship agreements with abutting property owners for monitoring and maintain public infrastructure assets (e.g. Wildlife Corridor).					Post-construction		Agreements to be executed upon construction completion
1.2	Provide compensation lands for any existing species at risk habitats that would be displaced by the business park.					Within one year after ploughing the lands (i.e. December 2025)		Habitat Management Plan (Environmental Protection Act)
1.3	Provide an ecological corridor to support the movement of wildlife between the business park and abutting environmental features.					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.4	Provide habitats / structures for pollinators (bird boxes, bat boxes, fallen logs, stone walls for bees, etc.)					Final Plan of SD		Landscape Plan in Final Plan of SD
1.5	Provide adequate landscape buffers and restoration areas near environmental features (e.g. valley lands, Butternut Creek, etc.).					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.6	Provide shade trees along roadways, trails, and parking areas to create habitat, and reduce the heat island effect.					Final Plan of SD		Landscape Plan in Final Plan of SD
1.7	Plant primarily native plant species in landscape areas to support pollinators, wildlife habitat and food throughout the seasons.					Final Plan of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.8	Ensure that (i.e. seeds, plant material) are locally sourced, where possible.					Final Plan of SD		Landscape Plan in Final Plan of SD
1.9	Utilize plant species to support carbon sequestration.					Final Plan of SD		Landscape Plan in Final Plan of SD
1.10	Provide ample space and depth to accommodate soil volumes required for large scale trees.					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.11	Minimize areas of grass that require frequent mowing and encourage the use of “low mow” and grassland habitats.					Final Plan of SD		Landscape Plan in Final Plan of SD

1.12	Ensure that lighting is night-sky compliant, and includes cut-off shields where adjacent to natural areas and the IFSGG lands.					Final Plan of SD		Detailed plan (Final plan of SD)
1.13	Explore options to provide solar-powered streetlights and pedestrian lights, where possible.					Final Plan of SD		Detailed plan (Final plan of SD)
1.14	Source street furnishings from local manufacturers, using local materials where possible (e.g. benches, bike racks, drinking water fountains, trash/recycling receptacles, transit shelters, wayfinding, lighting, paved seating areas)					Final Plan of SD		Streetscape / Landscape Plan in Final Plan of SD
1.15	Utilize low albedo materials for parking spaces, sidewalks, and trails where possible.					Final Plan of SD		Streetscape / Landscape Plan in Final Plan of SD
1.16	Utilize recycled materials for roads, parking spaces, sidewalks, and trails where possible.					Final Plan of SD		Streetscape / Landscape Plan in Final Plan of SD
1.17	Utilize permeable surfaces for parking spaces, sidewalks, and trails where feasible					Final Plan of SD		Streetscape / Landscape Plan in Final Plan of SD
1.18	Direct stormwater runoff to SWM ponds, landscape spaces and soils.					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.19	Utilize Low Impact Development (LID) features where possible (bioswales, rain gardens, etc.).					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.20	Minimize use of water required to maintain landscape areas, using drought-tolerant, native plants were feasible.					Final Plan of SD		Landscape Plan in Final Plan of SD
1.21	Provide underground rain cisterns and infiltration galleries to capture stormwater, where feasible.					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.22	Review potential options to provide district energy for the Business Park, where possible.					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
1.23	Review potential options to provide renewable energy sources (e.g. geothermal) where possible.					D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)

2	**Economic Development and Financial Viability**	**Objectives**			**Implementation**		
	Action items	II FUNCTIONALITY	III AFFORDABILITY	IV LOCAL ECONOMIC DEVELOPMENT	Implementation Phase	Status (Provide rationale if not implemented)	Supporting documentation required
2.1	Total development costs to break even, based on investment to service Business Park lands and development parcels.				x		x
2.2	Sales price of development parcels to offer competitive prices, reflecting current market values.				x		x
2.3	Deliver “ready to develop” parcels (i.e. pre-serviced) with access from a public road, allowing quick establishment for businesses.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
2.4	Provide a variety of parcel sizes to attract different business types, creating economically diversity.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
2.5	Design road network to connect with street and other land holdings to create an efficient, interconnected community.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
2.6	Design road network to inform the servicing layout. Maximum lots to be serviced along minimal road length for efficiency and reduced amount of hard surfaces.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
2.7	Servicing design to include ability to loop water main for efficiency and reduced maintenance costs.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
2.8	Design grading of Business Park to allow sanitary and storm services to follow existing grades, efficiently balancing cut and fill.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)

3	Community Well Being	Objectives			Implementation		
	Action items	I INTERFACE WITH COMMUNITY	II ACTIVE TRANSPORT-ATION	III PUBLIC REALM DESIGN	Implementation Phase	Status (Provide rationale if not implemented)	Supporting documentation required
3.1	Follow universal design principles (i.e. for all ages and abilities).				D.P. of SD		Streetscape / Landscape Plan in Final Plan of SD
3.2	Provide accessible seating opportunities as places to rest, take in views and socialize (e.g. boulevards, stormwater management areas, trails).				D.P. of SD		Streetscape / Landscape Plan in Final Plan of SD
3.3	Provide cycling infrastructure (bike routes) and amenities (bike parking, bike repair stations, etc.)				D.P. of SD		Streetscape / Landscape Plan in Final Plan of SD
3.4	Provide ample sidewalks and multi-use paths to promote active transportation.				D.P. of SD		Streetscape / Landscape Plan in Final Plan of SD
3.5	Consider design of future transit network (i.e. stops and amenities) within the Business Park.				D.P. of SD		Streetscape / Landscape Plan in Final Plan of SD
3.6	Create a permeable boundary to the Business Park to connect it to the surrounding neighbourhood.				D.P. of SD		Concept Plan (D.P. of SD) and Detailed plan (Final plan of SD)
3.7	Ensure stormwater management areas will also function as passive recreational space.				D.P. of SD		Landscape Plan in Final Plan of SD
3.8	Provide a strong visual presence from the street, creating a sense of place (e.g. entry feature with municipal address, landscaping, etc.)				D.P. of SD		Landscape Plan in Final Plan of SD
3.9	Provide opportunities for Public Art within the public spaces of the Business Park.				D.P. of SD		Landscape Plan in Final Plan of SD

4	Indigenous Placekeeping	Objectives		Implementation		
	Action items	I PUBLIC REALM	II LANDSCAPE DESIGN	Implementation Phase	Status (Provide rationale if not implemented)	Supporting documentation required
4.1	Engage with First Nations to design space(s) that respect and honour them as the Rights Holders for their Traditional Territories.			D.P. of SD		Landscape Plan in Final Plan of SD
4.2	Engage with First Nations and local Indigenous artists to contribute to Public Art projects.			Final Plan of SD		Landscape Plan in Final Plan of SD
4.3	Provide land acknowledgment(s) within the pedestrian realm of the Business Park.			Final Plan of SD		Landscape Plan in Final Plan of SD
4.4	Provide interpretive / educational signage to communicate narratives about First Nations' Traditional Territories related to these lands.			Final Plan of SD		Landscape Plan in Final Plan of SD
4.5	Design landscapes with native plant species that are of significance to the First Nations.			Final Plan of SD		Landscape Plan in Final Plan of SD
4.6	Provide opportunities for land-based teaching within the public landscape spaces of the Business Park.			Final Plan of SD		Landscape Plan in Final Plan of SD
4.7	Create opportunities for Indigenous gatherings in public realm spaces.			D.P. of SD		Landscape Plan in Final Plan of SD
4.8	Explore feasibility of providing facilities that broadly support Indigenous needs such as a Friendship Centre.			D.P. of SD		Landscape Plan in Final Plan of SD
4.9	Support economic reconciliation by requiring an Indigenous Engagement Plan for major projects.					Landscape Plan in Final Plan of SD

APPENDIX C – CASE STUDY ANALYSIS

A series of four documents on the design of industrial / business parks that promote an ecological and sustainable design model were reviewed and analysed. They are summarized below and demonstrate how they could potentially relate to the expansion lands.

Case Study #1: Green Business Parks Toward Sustainable Cities

Atwa, S., Saleh, A., Ibrahim, M.: Conference Paper in WIT Transactions on Ecology and the Environment, April 2017, DOI: 10.2495/ECO170021 Case Study 1

CASE STUDY OVERVIEW	CATEGORIES	EVALUATION SYSTEM
Article findings are applicable to all in the world of green business park planning and design. While the focus of the article is on the improvement of business parks in Egypt, the principles may be applicable to business parks globally. Authors reviewed 9 green business park case studies across the UK, Canada, Australia, China, Poland, and Netherlands to highlight the design strategies they used to meet their sustainability targets. The outcome of the above work is a recommended checklist for consideration during all stages of the design process.	▪ Environment and Landscape Design ▪ Water ▪ Waste ▪ Building Design ▪ Energy ▪ Materials ▪ Connectivity and Transportation ▪ Social ▪ Services Includes additional sub-categories	Points are allocated for each of those subcategories for environment, economic, and social indicators.

Case Study applicability: An effective evaluation model, where indicators of success or failure can be applied to this project.

Case Study #2: Innovista Eco-Industrial Park Development Guidelines (2011)

Development guidelines created and adopted by the town of Hinton, Alberta Council Case Study 2

CASE STUDY OVERVIEW	CATEGORIES	EVALUATION SYSTEM
Guidelines are meant to function more as guidance than prescription - allowing for optionality in design. It takes the form of a checklist with criteria split between Required and Optional. Some of the criteria are subjective, that could be more direct and quantifiable. If certain systems are recommended, then options could be provided in convenient ways so there are more assurances that this can be achieved.	▪ Pre-Development Planning ▪ Parcel Layout & Organization ▪ Access + Movement ▪ Landscaping & Open Space Design ▪ Energy Systems ▪ Water, Wastewater, and Stormwater systems ▪ Design Character & Materials ▪ Construction	The checklist is a series of questions on design criteria relating to the categories shown in the column to the left. There is space for those submitting proposals to provide answers as to

Developers have a sense of control and freedom, however, also have the ability to choose the easiest and cheapest options. Municipal reviewers of proposals would require support, to ensure that developers are committed to working towards achieving the guidelines that are developed.	▪ Innovation in Sustainable Development	how they are addressing each criterion.

Case Study applicability: The guidelines can be utilized and tailored to suit the goals that the municipality is striving to achieve.

Case Study #3: Singapore: Planning for Biodiversity in Business Parks

Written by: Sng, M. Published by *the Centre for Urban Greenery and Ecology* Case Study 3

CASE STUDY OVERVIEW	CATEGORIES	EVALUATION SYSTEM
This article highlights the corporation's approach to sustainable development, with a focus on Singapore's first eco-business park, "The Cleantech Park." It is not a set of guidelines, but more of a conceptual framing of their approach to design. The article has no checklists. Design centers around a "Green Lung," taking the form of a swamp type ecosystem which doubles as stormwater management, with green 'fingers' reaching out along pathways and between buildings to bring people closer to nature. The intention to preserve the natural environment and promote biodiversity is cited numerous times. It also notes 3 things that make business parks uniquely situated for sustainable development: Large open spaces for green space, large flat roofs (for constructing ecologies/habitat), and; Quiet at night. Specific intentions, with measurable and quantifiable criteria are included that will identify if the project was a success. There are opportunities for researchers to monitor commitment to initial proposals, which could contribute to successful eco-business park guidelines in the long term.	▪ Environmental ▪ Economic ▪ Social	None: The article provides a design framework only.

Case Study applicability: The focus on designing the park as an ecosystem with many sustainable features is highly applicable.

Case Study #4: United Nations International Guidelines for Industrial Parks (2019)

Produced by United Nations Industrial Development Organization (UNIDO) Cross-Disciplinary Team on Industrial Parks (Zhao, J., Gebremenf A, E., Ridlovschi, R., Ding, H., and Zhang, M.) under general guidance of Philippe Scholtès. **Case Study 4**

CASE STUDY OVERVIEW	CATEGORIES	EVALUATION SYSTEM
This is a reference framework for stakeholders involved with industrial parks, intended for use at all stages of park development. Document is applicable for	▪ Sustainable site development	The article cites three main principles with performance indicators for each.

industrial parks around the world, although the precedents analyzed are from Ethiopia, Peru, and China. At the planning stage, it is encouraged there be a focus on: ▪ Long-term vision with strong collaboration between all stakeholders ▪ Integrated infrastructure, inclusive social infrastructure ▪ Synergy between industries on site, mixed land uses ▪ Conservation of natural features, enhancement of environment and landscape areas ▪ Renewable energy sources, energy conservation, maximizing passive solar design ▪ Suitable, and diverse, plot sizes for future expansion Of interest are the quantitative sub-indicators as well as the grading framework for industrial business park evaluation. Compared to other sources, this document provides clear, objective, criteria for success or improvement, rather than being subjective.	▪ Sustainable transportation ▪ Water conservation ▪ Energy efficiency ▪ Sustainable material and resource management ▪ Health and well-being ▪ Green education and public consultations ▪ Waste management	Indicators have a series of 'composite indicators' using quantitative inputs that are either met / not met. Quantitative input is intended to be comparable against national performance outside the park. Overall performance scores within each principle of economic, social, and environmental are assigned and graded for an overall percentage. Unfulfilled inputs are meant to reveal opportunities for improvement, not failure.
Case Study applicability: The article encourages this framework to be adapted to the specific project needs.		

St.Lawrence Business Park Expansion Lands

Site Design Guidelines
November 2025

FOTENN

Prepared for the City of Kingston

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November 21, 2025
Final Draft

Table of Contents

Principles, strategies, objectives and guidelines to ensure that site development at the St. Lawrence Business Park reflects the range of ecological, cultural, social and economic values.

1.0 INTRODUCTION

1.1 Purpose

The St. Lawrence Business Park ('SLBP') Expansion Lands Site Design Guidelines ('the Guidelines') build on the Shovel-worthy Evaluation Framework ('Framework') developed by SpruceLab, in collaboration with the City of Kingston and the Indigenous Food Sovereignty Garden Group (IFSGG). The Framework was prepared to support the creation of a shovel-worthy concept plan for the business park expansion lands, in a way that respects Indigenous knowledge, while helping to inform future development. These Guidelines incorporate and should be seen as a continuation of the Framework, building on the principles, strategies, objectives and potential guidelines prepared to ensure that site development reflects the range of ecological, cultural, social and economic values identified.

These Guidelines provide directions for applicants preparing Zoning By-law Amendments and Site Plan Applications and act as a reference for the City to assess, guide, enhance, and evaluate development proposals for business park expansion lands. The Guidelines are designed to guide future applicants on developing the land in a shovel-worthy manner which also further progresses the strategic direction and design objectives of the Official Plan. Potential facilitation tools such as grant incentives, green initiatives, and community improvement plan (CIP) funding have also been considered to help facilitate the implementation of the Guidelines.

The Guidelines reflect urban design best practices based in the Ojibwe Seven Generations Principle and encourage holistic, integrated, and innovative site design that integrates Indigenous voices and knowledge in the foundational Framework. With continued engagement and collaboration, the development of these guidelines will guide the development of a sustainable business park that contributes to the identified vision, allowing flexibility and a variety of design approaches to attain these goals, while aligning with key principles and objectives.

"The Seven Generations Principle is based on an ancient Haudenosaunee understanding that the decisions made today should be made with consideration of the needs of seven generations into the future, while respecting the ancestors' teachings and priorities shared from seven generations past."

(Shovel-worthy Evaluation Framework for St. Lawrence Business Park Expansion Lands, pg. 7, Sprucelab)

These guidelines apply to all aspects of site and building design within the business park, as shown in Figure 1: Subject Site. They do not apply to interior building design. They are intended to guide projects through every stage of development—from identifying site opportunities and constraints to the preparation of development concepts and shaping public realm and streetscape elements. At the lot level, the Guidelines seek to ensure new development achieves the "shovel-worthy" principles and objectives, addressing both built form and open space design to create a cohesive and high-quality environment. These Guidelines are intended to be precedent setting and may help inform and inspire similar approaches in other City of Kingston initiatives.

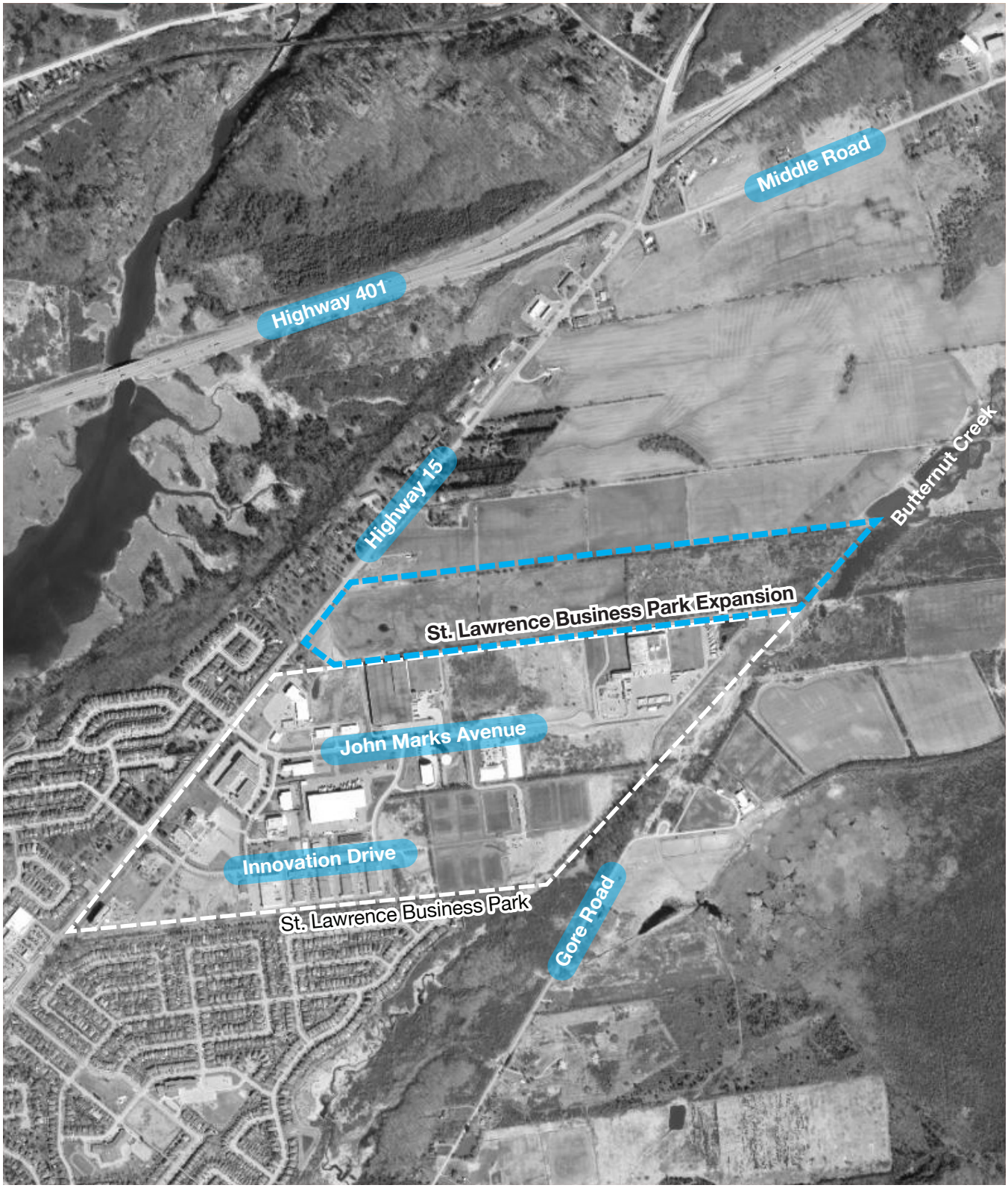


Figure 1: Subject Area and Surrounding Context

1.2 Subject Site and Surrounding Context

The Guidelines apply to the St. Lawrence Business Park Expansion Lands, also referred to as municipal address 1429 Highway 15. The Expansion Lands are made up of five additional blocks located along Highway 15 and north of the existing St. Lawrence Business Park Lands, in Kingston's East End, approximately 2.0km south of Highway 401.
The surrounding context includes the existing St. Lawrence Business Park Lands, one of five business parks in the city, to the south. This business park is designed as an industrial and commercial hub that supports businesses ranging from distribution/ logistics, to medical, technology, and light industrial sectors. In the southern portion of the business park there is a proposal to develop a recreational multiplex featuring indoor playing fields and recreational spaces. To the west, there are existing single-detached homes and residential subdivisions that line the Cataraqui River. The site lies within the watershed of the Cataraqui River – St. Lawrence River, in addition to Butternut Creek is located to the east of the site, which includes natural heritage features, such as the creek, its associated riparian zone, and wetland features. Future residential development is proposed to the north of the subject site. To the immediate northwest, adjacent to the site, is the Indigenous Food Sovereignty Garden Group Lands.

1.3 History

In May 2023, City staff retained SpruceLab Inc. to work with the IFSGG to develop an understanding of what shovel-worthy development means for the expansion lands. The collective work of SpruceLab, City of Kingston staff and the IFSGG led to creation of a document known as "Shovel-worthy Evaluation Framework for the St. Lawrence Business Park Lands, Kingston, Ontario" ('Framework'). The Guidelines build on the principles, strategies, objectives, and potential site designs guidelines for private lands outlined in the Framework. This document also builds on various strategies to achieve shovel-worthiness within municipally owned areas of the subject lands (public lands) such as the road allowance(s), stormwater blocks, public space, etc.

Much of the information in the Framework was developed through collaboration, ongoing dialogue, and reflection with project collaborators from May 2023 to 2025. The process involved close working relationships and the integration of ideas and information from the IFSGG, Spruce Lab, JLRichards, and City of Kingston staff into the development of the Framework, including many meetings and multiple draft reviews. Additionally, SpruceLab undertook a case study analysis as background research to support the work.

The City retained Fotenn in July 2024 to complete the Zoning By-Law, Official Plan Amendment, and Draft Plan of Subdivision applications for the subject lands. These applications outlined the proposed conceptual plan detailing lot location, stormwater blocks, road allowance(s), and ecological corridor location.

1.4 Planning Context

The subject lands are currently designated Rural on both Schedule 2 City Structure and Schedule RC-1 Rideau Community Secondary Plan of the Official Plan. The SLBP Expansion Lands are also zoned General Rural Area Zone (RU) in the Kingston Zoning By-law 2022-62.

The City of Kingston has submitted Planning Act applications to expand the SLBP to include the subject lands. An Official Plan Amendment Application is required to: (1) expand the City of Kingston's urban settlement area boundary to include the entirety of the site, and (2) re-designate the site to Highway Commercial, Open Space, and Business Park Industrial in the Rideau Community Secondary Plan and apply a site-specific policy to implement additional considerations needed to implement the plan.

The purpose of the Zoning By-Law is to rezone from General Rural Area Zone (RU) to Protected Open Space Zone (OS1), Commercial Arterial Zone (CA) and Business Park Zone (M1), and to apply an exception overlay which includes increased setbacks, planting strip, and minimum landscaped open space requirements to implement aspects of the Framework.

The application for draft plan of subdivision will facilitate the land division and road creation.

City of Kingston Official Plan

The City of Kingston's Official Plan provides policy direction for lands designated highway commercial, business park industrial, and open space. Section 3 – Land Use Designations & Policy and Section 10B: Rideau Community Secondary Plan specifically speak to the proposed land use designations applicable to the site. Section 3 provides general policy direction related to locational criteria, access, buffering, land assembly, and high-level design criteria for the development of the proposed land use designations. Section 10B provides further policy direction specific to the Rideau Community Secondary Plan Area which addresses topics such as landscaping and landscaped buffers, parking, outdoor storage, public access to open space, design, and access. Both Section 3 and Section 10B provide a high-level policy framework which guides development within the specific land use designations.

In addition to Sections 3 and 10B, Section 8 of the Official Plan provides policies regarding Urban Design. Section 8 provides policies which focus on design associated with accessibility and safety, streetscapes and public places, new development, and gateways to the city. Further, Section 8 provides the policy context for the creation of urban design guidelines noting that they are to be developed for specific types of development or for specific areas of the city and are to be used for the following:

- Clarify the strategic direction and design objectives of the Official Plan;
- Complement and enhance any design considerations in development applications;
- Assist in the preparation of any future secondary plan, community improvement plan, or other relevant planning documents; and,
- Assist the City in evaluating development proposals.

As the SLBP Expansion Lands Site Design Guidelines are a form of urban design guideline contemplated within the official plan, these guidelines are intended to both build upon the Shovel-worthy Evaluation Framework and the policy direction provided within the official plan.

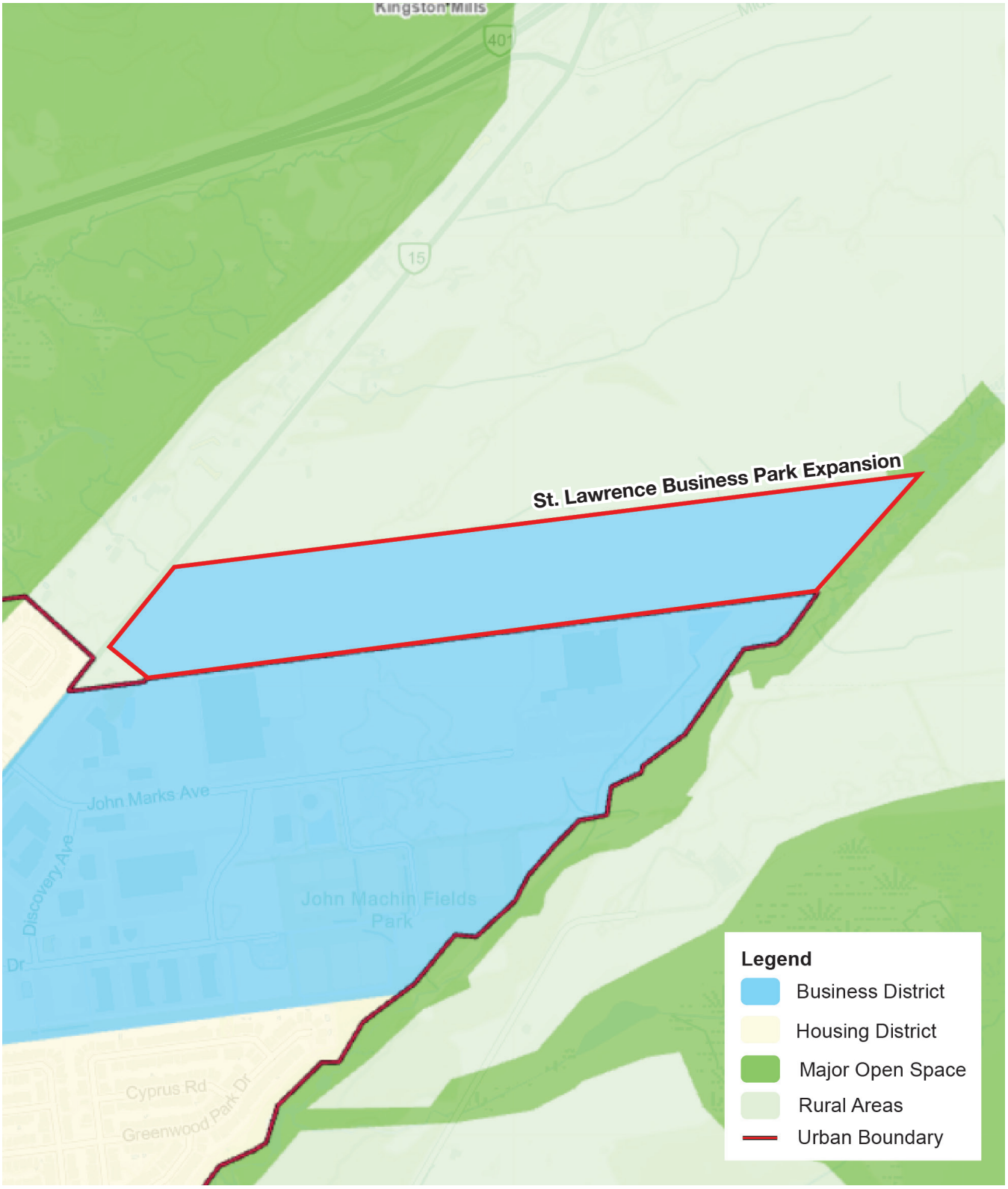


Figure 2: Proposed amendment to OPA Schedule 2

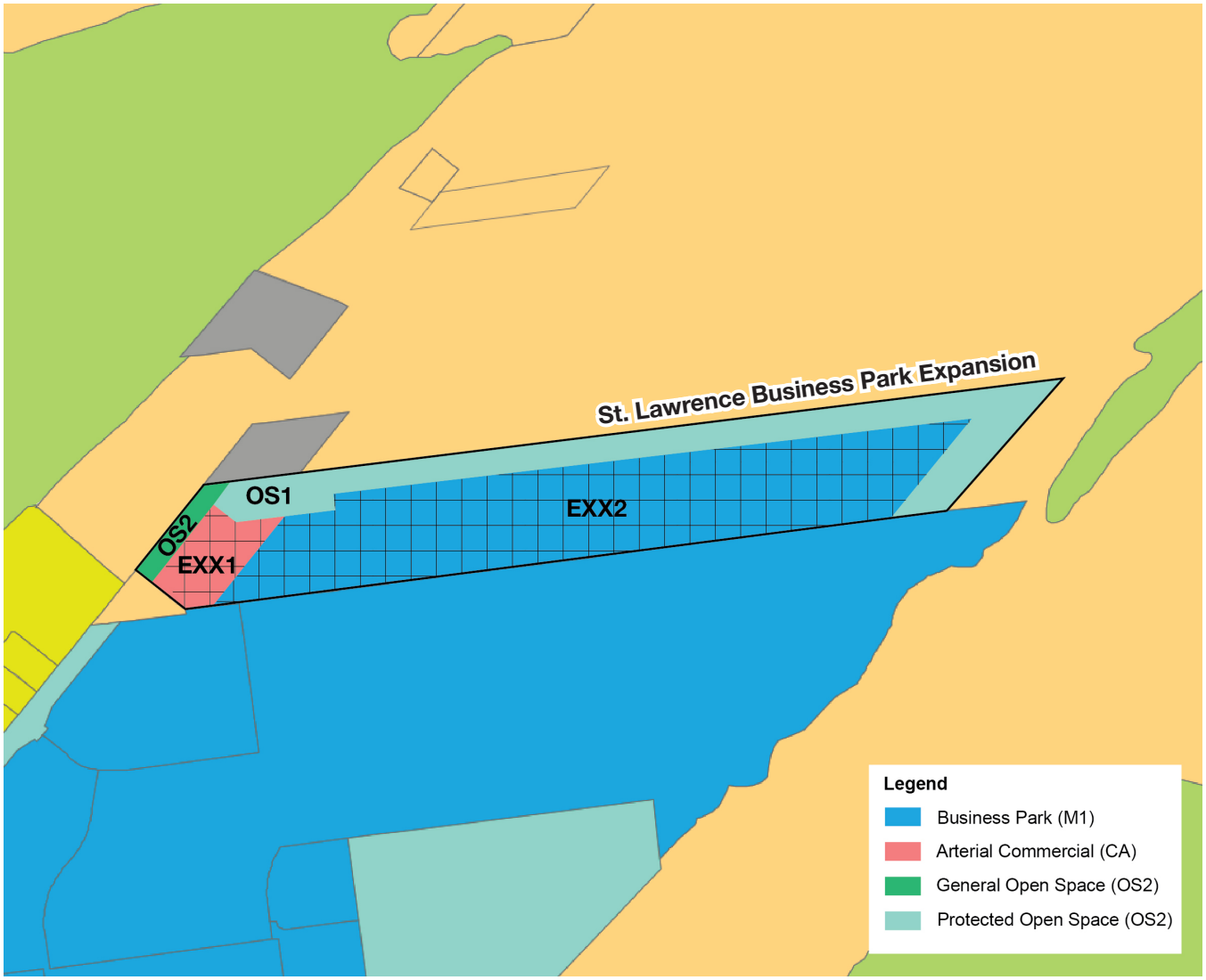


Figure 3: Proposed amendment to Zoning Schedule

1.5 Document Structure

The Guidelines are organized into five (5) sections. The first two sections introduce the project, history, process and background planning and policy analysis. The remaining sections outline the vision and guiding principles, public land guidelines, private realm guidelines and implementation strategies.

- **Section 1: Introduction –** An outline of the purpose, context and history of the Guidelines, which serves as the foundation for their application and intent within the St. Lawrence Business Park Expansion Lands.
- **Section 2: Vision and Principles –** Reiterates the overarching vision, principles and objectives that guide the design directions and intent outlined throughout the document.
- **Section 3: Public Land Guidelines –** Provides guidance on public realm elements such as streets, open spaces, ecological corridors and pedestrian infrastructure to ensure a pedestrian-oriented environment.
- **Section 4: Private Realm Guidelines –** Focuses on private realm elements such as siting and building orientation, massing, parking, landscaping and architectural design to ensure a cohesive, coordinated, and adaptable built form that aligns with the vision and complements the public realm.
- **Section 5: Implementation –** Explores how the guidelines will be applied, monitored and evaluated through the planning process to ensure success and lasting outcomes.

In addition to the five (5) sections, an evaluation criteria matrix is also included as Appendix A: Evaluation Criteria. The evaluation criteria matrix serves as a guide for both applicants and city staff to review and track how applications meet the intent of the site design guidelines.

2.0 VISION AND PRINCIPLES

2.1 Vision

The vision for the St. Lawrence Business Park builds on the vision statement from the Shovel-Worthy Evaluation Framework.

Vision Statement (Shovel-worthy Evaluation Framework, SpruceLab)

A shovel-worthy business park seeks to achieve a seven generations stewardship model, while fulfilling the core purpose of the business park in its form and function.

The Seven Generations Principle is based on an ancient Haudenosaunee understanding that the decisions made today should be made with consideration of the needs of seven generations into the future, while respecting the ancestors' teachings and priorities shared from seven generations past.

Additionally, the Ojibwe Peoples share a teaching of "The Seven Grandfathers", where each was given the responsibility to teach about the gifts of these seven teachings: Wisdom, Love, Respect, Bravery, Honesty, Humility, and Truth. Collectively these gifts were shared to help humans live a good life that is in harmony and balance with Mother Earth. The Dish With One Spoon wampum belt reflects these foundational teachings, as a covenant between the Haudenosaunee and the Anishinaabeg Peoples to share their traditional territories and to ensure these lands and waters would be respected and protected for their sacredness and their abundant gifts of sustenance for humans and all creatures. Today, this translates into protecting the ecological systems that the City of Kingston's citizens and all living things rely on, through the preservation of natural systems, the creation of ecological corridors, and the development of projects that are deemed "shovel-worthy", and not merely "shovel-ready".

The SLBP will build on the principles, objectives and strategies identified through the Framework to become a dynamic, high-quality employment area that supports a range of businesses and contributes to the City's economic vitality.

2.2 Principles

2.2.1 Ecological Health and Sustainability

The St. Lawrence Business Park expansion should align with ecological health and sustainability, prioritizing biodiversity and resilience to climate change. Development should look to incorporate nature-based solutions to achieve this while lowering life cycle and maintenance costs, including green infrastructure and ecological corridors to connect Butternut Creek with the adjacent lands, promoting flood mitigation, allowing groundwater recharge, wildlife movement and habitat creation.

This document acknowledges that in addition to the above, there is a clear need to integrate Indigenous knowledge into the work of "nature-based solutions", as this is knowledge that has evolved over many thousands of years from observing, learning from, and innovating with natural systems, by the Indigenous Peoples of those lands. The view of nature as "resources" from a human-centric position of usefulness, or of working with nature to the advantage of what humans need, is colonial and contradictory to an Indigenous world view of relating to nature as relatives, and Mother Earth. It is important here to draw attention to this distinction, and to challenge the predominant colonial mind-set that underlies much of development, while sharing these definitions above as having endorsement by various levels of government. Through a "Etuaptmumk / Two-eyed Seeing" model (a concept developed by Mi'kmaq Elders Albert and Murdena Marshall) we can seek to take the best of both worlds, and to consider a definition that respects both ways of knowing and being. (Shovel-Worthy Evaluation Framework for St. Lawrence Business Park Expansion Lands, pg. 7, Sprucelab)

OBJECTIVES

Climate Resilience
Landscapes and infrastructure should be designed to adapt to extreme weather events, reduce urban heat islands, and protect soil health. Nature-based features like green roofs, bioswales, and permeable paving are encouraged. Robust, naturalized vegetations with an emphasis on trees and shrubs in healthy soils should be prioritized to capture carbon and mitigate climate risks.

Enhanced Biodiversity
The development should prioritize healthy soils supporting native plant communities for improved biodiversity of invertebrates, birds, and small wildlife year-round, creating vibrant and connected habitats throughout the business park.

Landscape Resilience
Ecological corridors, open spaces, and snow loading should be strategically placed as habitat, refugia for wildlife and as green buffers, ensuring a cohesive, interconnected environment that resists fragmentation. Wherever possible, surface runoff from architecture and paved surfaces should be directed to bioswales and other strategically placed low points to support plant growth, soil microbiology, and to improve ground water quality and quantity.

Water Balance
Stormwater should be managed in passive, cost effective, and low maintenance approaches whenever possible through a series of connected low impact development (LID) techniques, supporting infiltration and habitat, reducing runoff, and enhancing soil moisture for vegetation health. Consider replacing stormwater tanks and pumps with affordable subsurface storage. As the site is adjacent to Butternut Creek and its riparian zone, filtration and infiltration of stormwater contribute to consistent seasonal flows and reduced warm season water temperatures, improving aquatic ecology and downstream resiliency.

2.2.2 Economic Development and Financial Viability

Development within the business park should support Kingston's economic growth while balancing environmental and social goals.

OBJECTIVES

Recoup Investment
The projected sale price of serviced lots should be able to recoup the anticipated cost of development. In addition, the serviced lots be sold at reasonable prices aligned with market value.

Functionality
A well-planned road and servicing layout should ensure operational efficiency, safety, and adaptability for future growth and diverse business needs.

Affordability
Financial barriers to entry for businesses should be minimized, ensuring affordable and streamlined development processes within the business park.

Local Economic Development
The business park should attract a variety of businesses through flexible lot sizes and promote synergies among tenants, helping to create quality jobs for Kingston residents.

2.2.3 Community Health and Well-Being

The business park is envisioned as an inclusive space that integrates with the surrounding neighborhoods, enhancing livability and community connection. Public spaces should be designed to encourage gathering, recreation, and learning, with universal access for people of all ages and abilities. Active transportation should be promoted through sidewalks, trails, cycling infrastructure, and passive recreation areas.

OBJECTIVES

Interface with Community
The interfaces with the community should be designed with permeable boundaries, pedestrian-friendly with options for many paths of travel, and welcoming, with visual landmarks and pathways connecting to surrounding areas and the IFSGG lands.

Active Transportation
Active transportation, meaning any form of human-powered travel such as walking, cycling, or using mobility aids, should be supported through cycling routes, walking trails, and transit-friendly design to encourage healthier lifestyles.

Public Realm Design
Accessible, shaded seating, educational signage, and art installations should enrich the public realm, supporting relaxation, social connection, gathering spaces, cultural expression, and opportunities for humans to connect meaningfully to both places and to nature.

2.2.4 Indigenous Placekeeping

The City of Kingston is located on the traditional territories of the Anishinaabe, Haudenosaunee, and Wendat Nations and is now home to many First Nations, Metis, Inuit and other Indigenous peoples from around the world. Of the Truth and Reconciliation Commission of Canada's Calls to Acton, Acton #43 is quite relevant:

"We call upon federal, provincial, territorial, and municipal governments to fully adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) as the framework for reconciliation."

Additionally, Indigenous placekeeping can take inspiration from the guiding principles of the medicine wheel, often used by Indigenous cultures in North America as a holistic tool for teaching and healing, following an oral, storytelling approach. Working with Elders and Knowledge Holders to consider meaningful and culturally significant ideas for placekeeping would directly support the development of shovel-worthy sites.

The business park should acknowledge Indigenous world views, narratives and designs, and explore ways to embed their voices, Knowledges, and cultures into the design of the public realm. For example, land is appreciated as Mother Earth and not owned in a relational world view, that supports All Our Relatives (all creatures).

OBJECTIVES

Indigenous Design

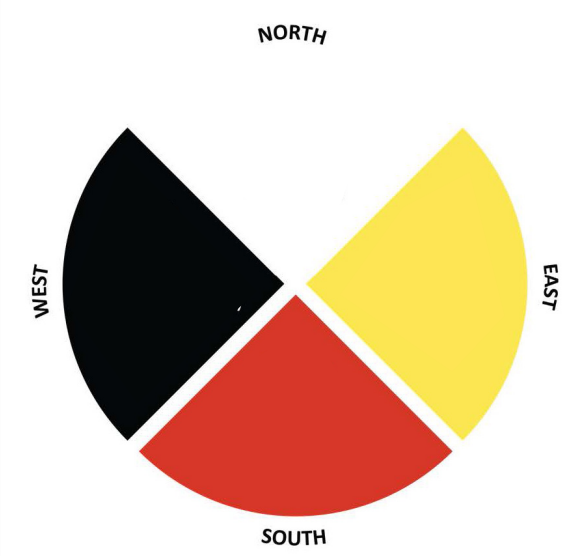
Indigenous Knowledge Holders, artists and designers should be engaged to contribute to the designs of public realm areas. These spaces should be designed in a holistic manner and to respond to First Nations expressed interests, and to include all Indigenous voices from the Kingston area.

Indigenous Narratives

The public realm should communicate Indigenous narratives and land-based teachings.

Caring for Mother Earth

Partnerships with Indigenous organizations are encouraged to support stewardship activities like planting of native species and land-based training programs, advancing Indigenous gardening practices and restoration.



3.0 PUBLIC LAND GUIDELINES

3.1 Streets and Blocks Structure

/ The alignment of streets should respond to natural heritage features, built and cultural heritage features and the existing and future potential street network.

/ Ecological corridors and/or blocks should be established for enabling robust ecosystem services, increasing biodiversity and enhancing multi-species navigation.

/ A variety of block sizes should be established to provide and promote flexibility in parcel sizes that meet the needs of a variety of industrial and business park uses.

/ Streets and blocks should allow for permeability between the business park and the surrounding community, allowing for enhanced access and integration.

/ Streets should promote active transportation both within the road allowance and in their connectivity to adjacent existing and future streets and trails.

/ Equal priority should be given to all modes of transportation including vehicles, cycling, and pedestrians, as well as other appropriate multi-species ecological connections (i.e. over or under passes).

/ First Nations and the local Indigenous community should be engaged to consider the special naming of streets to honour the cultural and natural heritage of the site.

Top: Large blocks broken up to maximize permeability and outside spaces.

Middle: Active transportation and connectivity, varierty of block sizes, and connections to context.

Bottom: Enhanced access and connectivity through streets blocks, and mid-block connections.

3.2 Connectivity, Circulation and Access

Connectivity

/ The development should be walkable from within a site/parcel to the edges of the business park, including continuous sidewalks on all streets and the inclusion of mid-block connections to enhance connectivity and create permeability.

/ Mid-block connections should be introduced, where feasible and appropriate, to maximize both visual and physical permeability and connectivity through larger sites and to create a finer grained block pattern.

/ Pedestrian connections should link blocks to features and destinations (i.e. connections to/ through the ecological corridor, to Highway 15, to the future community to the north) and to Butternut Creek.

/ Ecological features such as Butternut Creek should be connected through multiple greenways, ecological corridors and/or trails.

/ Opportunities to design pedestrian routes with interpretive and educational features that reflect Indigenous placekeeping values and highlight ecological functions and multi-species habitats should be considered.

/ Future transit connections and infrastructure (i.e. bus stops, amenities) should be considered.

/ Cycling infrastructure should be incorporated into the streetscape, creating linkages to the immediate and surrounding street network and the existing/future trail systems/corridors.

Top: Mid-block connections used to maximize permeability.

Middle: Pedestrian connections that link blocks to features and destinations.

Bottom: Integration of pedestrian routes and active transportation connections.

Circulation

Sidewalks should be provided on at least one side of the street, and where required, on both sides of the street. Sidewalks should have a minimum width of 2.1m to allow for unimpeded pedestrian movement. Well-defined pedestrian walkways should be provided at the edge of all buildings with connections to parking and amenity areas, to enable safe and direct pedestrian circulation.

Continuous, clearly marked walkways should be provided between parking areas, main building entrances and municipal sidewalks.

/ Pedestrian connections should be adjacent to vehicular entry driveways to ensure the most direct access for all users.

/ Pedestrian connections should be visibly and physically differentiated from vehicular routes through the use of materials (i.e. pavers, raised crosswalks) or painted lines.

/ Site design must maximize safety and accessibility through the use of walkway widths, grading, curb ramps and entry ramps that comply with Accessibility for Ontarians with Disabilities Act (AODA) standards.

Bike parking and amenities (i.e. bike pumps, tools, storage) should be provided on the ground floor close to entrances and main circulation routes and should not impede pedestrian movement.

Access

Building entrances should be clearly defined so they are in public view.

/ Public realm seating and benches along sidewalks should be designed and distributed at a distance to enable users with mobility challenges to transverse the site independently.

Top: Clearly demarcated pedestrian crossings.

Middle: Mid-block pedestrian connections create permeability and promote active transportation.

Bottom: Clearly defined building entrances and access.

3.3 Gateways and Landmarks

/ Blocks along Highway 15 and along the future extension of Innovation Drive should provide opportunities for gateways and landmarks.

/ Gateway features, such as entry signage, accent planting, lighting and/or paving, are encouraged to provide visual interest between the building and the road allowance.

/ Building articulation and design may be used as gateway features, applying a high level of design that reinforces their prominent location

/ Indigenous public art, interpretive signage and cultural references should be incorporated at key entrances and landmark locations.

/ Opportunities to design gateway features in collaboration with First Nations Rights Holders and the local Indigenous community should be explored including sculptures, installations, paving art, murals, etc..

/ For all gateway and landmark locations, blank walls, outdoor storage and/or other unsightly features should be prohibited from primary frontages.

All: Utilizing building articulation to highlight and define key gateways, and reinforce their prominent location.

3.4 Open Space System / Public Spaces

/ Open spaces should be considered an integral part of development within the business park and may include privately owned public spaces, where appropriate.

/ Natural features should be protected by adequate buffers and incorporated into new development, where appropriate, including topography, natural overland flow channels, ephemeral wetlands, and other hydrological features, boulders, rock outcroppings, native thickets, etc.

/ Areas between buildings should be well landscaped and programmed where appropriate (i.e. outdoor seating and dining areas, shaded areas, plazas, public art, etc.).

/ Collaborate with local Indigenous groups to support Indigenous-led stewardship.

/ Collaborate with First Nations Rights Holder to explore opportunities and to confirm the wording for visible land acknowledgement(s) in public spaces.

/ Provide opportunities for Indigenous gatherings and other community needs in public realm spaces, where requested.

All: Providing areas that are well landscaped and programmed, including seatings, dining areas, and shaded areas.

3.4.1 Linear Ecological Corridor Guidelines

- Appropriate measures should be taken to ensure planting sites are free of non-native ruderal weeds and invasive species, as determined by a qualified botanist or landscape architect.
- If possible, where soils are to be disturbed, topsoil is not to be mixed into subsoils. Rather, topsoil should be removed and stockpiled in windrows no wider or higher than 1.2m. Stockpiled topsoil is to be redistributed once earthworks are complete.
- Soils should be non-compacted. If working on compacted soils, mechanical treatment to loosen are necessary, with subsoilers, ploughs, and discs as acceptable approaches with the method determined by the depth of compaction.
- The minimum width of an ecological corridor should be 30.0m.
- Avoid level, smooth topography in favour of articulating surfaces.
- If conveying overland flow as part of civil infrastructure, the design channel should be interrupted with in-line features varying in width, depth, and shape to foster infiltration, complex edge conditions, vernal pools, and ephemeral wetlands.
- Tree establishment should employ a wide range of native species of varying heights planted at a minimum of 1.8m and a maximum of 2.5m spacing to support the rapid establishment of an economical and biodiverse multilevel system.
- When possible, roughly 10% of trees should be a minimum 40mm caliper serving as nurse trees, and should be composed of a mix of native, full sun, and rapid growth species.
- The remainder of trees should be saplings in plug, potted or bareroot form and planted in fall (Note: bareroot trees may only be planted in a narrow timing window of mid-October).
- A minimum of 20% of trees should be diverse native evergreens appropriate to the geographical location.
- All woody plant material should be properly treated with approved mycelium inoculant at the time of planting.

Top/Bottom: Ecological corridor (bird's eye), measures to ensure sites are free of non-native and invasive species.

- Surrogate “pit and mound” features should be implemented on a minimum of 20% of the total site area.
- The ground should be seeded with multiple custom and diverse native seed mixes i.e. overlapping a minimum of 2.0m between regions.
- The inclusion of subsurface reptile hibernacula is highly encouraged. Masonry and other non-toxic construction debris may be incorporated to achieve this. Detail to be provided.
- The addition of weed free compost (excluding mushroom compost) is encouraged.
- Do not apply commercial fertilizers.
- Do not apply herbicides and pesticides to ecological corridors unless specified to address site issues as determined by a qualified botanist, biologist, or landscape architects through an Invasive Species Management Plan as part of the EA process.
- All trees and shrubs should have a 30.0cm decomposable, permeable disc (Cocodisc, or approved equal), installed at their base at the time of planting.

3.4.2 Little Forest Guidelines

/ Soils should be uncompacted. If working on compacted soils, mechanical treatments to loosen the soil are necessary. Subsoilers, ploughs, discs, and tillers are acceptable approaches, with the method to be determined by the depth of soil compaction.

/ When planting in compacted soils, high quality weed-free compost (excluding mushroom compost) should be added to all planting areas and incorporated to a minimum depth of 100.0mm and covered with a minimum of 100.0mm of arborist woodchips (i.e. shredded cedar mulch).

/ Where soil is not highly-compacted, plant in existing soils and cover with a minimum of 100.0mm of arborist woodchips.

/ Level, smooth surfaces should be avoided in favour of articulated, rough surfaces that allow for water infiltration.

/ Tree establishment should employ a wide range of native species of varying heights, and planted at a rate of 3 trees per m^2.

/ Trees should be saplings in plug, potted or bareroot form and planted in fall (Note: bareroot trees may only be planted in a narrow timing window of mid-October).

/ A minimum 150.0mm layer of arborist woodchips (i.e. shredded cedar mulch) should be applied to the entire planting area 6 to 12 months in advance of planting (i.e. spring application for fall planting). Attempting to mulch full installation after planting will be unsuccessful.

All: A wide range of native planting and species of varying heights.

3.5 Streetscape Elements

3.5.1 Planting

- Existing topsoil should be carefully removed and stockpiled on site prior to any excavating or earthworks. Topsoil should be stored in windrows no higher or wider than 1.2m.
- Existing trees and landscapes should be identified to be retained and protected during construction based on per tree setbacks established by a certified arborist.
- The design of landscapes should consider native plant species that are of significance to the First Nations Rights Holders.
- Tree species should be majority native with an allowance for non-invasive urban and drought tolerant species where appropriate or needed to respond to the challenges faced by urban street trees (i.e. air pollution, salt spray, limited soil volumes, etc.).
- A diverse mix of native and urban tolerant tree species should be planted, avoiding monocultures.
- Seeds, trees, and plant material should be locally sourced, where possible.
- Shade trees should be provided, with native understory plantings where possible, at regular intervals along roadways, sidewalks, and parking areas to reduce the urban heat island effect.
- Street and Boulevard trees should be high branching deciduous species with a minimum 7.0m spacing.
- Where possible and appropriate, an understory layer of native shrub plantings is encouraged. Shrub plantings should not interfere with pedestrian, vehicle or wildlife visibility.
- Provide a minimum 30m^3 of uncompacted, unrestricted soil per tree and 20m^3 for trees that share soil volumes (Maximum 85% Standard Proctor Maximum Dry Density (SPMDD); less than 80% SPMDD preferred).
- The use of soil cells or other engineered structural solutions are encouraged, where necessary, to achieve per tree soil volume.
- The use of structural soil should only be used as a bridge to support tree roots moving from one soil volume area to another.
- Landscape planting material should be composed largely of native species with an allowance for non-native, non-invasive and drought-resistant species where needed (i.e. salt resistant species in the road allowance).
- Native plant species should be planted to support invertebrates, wildlife habitat and food throughout the seasons.
- Non-streetscape vegetation should include a mix of coniferous and deciduous planting materials. High maintenance expansive sod and lawn are discouraged. When justified, these areas should be minimal and scaled appropriately for specific intended use. Consider drought tolerant, low growing, low maintenance seed mixes in place of sod.
- Plantings should maintain views to the eco-corridor, Highway 15 and the internal street network.
- Adequate landscape buffers and restoration areas should be provided near environmental features (i.e. Butternut Creek).

All: Landscape planting material are composed largely of native species.

3.5.2 Site Furnishings

- / Benches and seating areas not related to architectural programming should have a specific focus on pedestrian areas along the eco-corridor and street frontages.
- / Benches and seating areas should be aligned along pathways with a minimum setback of 80.0cm to the pedestrian clearway.
- / Benches should have sturdy arm rests and be spaced at frequent intervals.
- / Accessible seating should be provided at places to rest, view points and gathering areas.
- / Trash receptacles should be durable and easily accessed by public works with separate containers for “Trash”, “Recycling”, and “Compost” housed in each.
- / Trash receptacles should be distributed at major intersections, public transit stops, and within view of natural features or entrances of said features.
- / Street furnishings should be sourced from local manufacturers, using local materials, where possible.
- / Consider City of Kingston designs (e.g. bike parking), or custom designs to support Indigenous placekeeping.
- / Site furnishings should consider Indigenous languages, symbols, and storytelling narratives to communicate placekeeping values.

All: Benches and seating provided at places of rest, view points and gathering areas.

3.5.3 Pedestrian Paving

- Sidewalks should be constructed of cast-in-place (CIP) light duty high albedo concrete (>29 SRI).
- Paving materials for pathways should be high albedo (>29 SRI) to reduce the urban heat island effect. Permeable surfaces should be used for parking spaces, sidewalks and trails, where possible,
- Impervious surfaces, and where ongoing and regular maintenance of this paving will be provided to prevent clogging and weed growth, should be minimized where they do not serve a functional role. If possible, these surfaces should be graded towards appropriately scaled LID features designed with emergency overflows to catch basins.
- The use of open grid and permeable paving is encouraged, where appropriate.

3.5.4 Fencing and Screening

- Fencing (and corner lot fencing) should only be used to screen the rear yard or the rear-yard exposed to flanking streets.
- Fencing that fully blocks the visibility of the front yard is highly discouraged.
- Fencing that restricts visibility should be no higher than 1.8 meters
- Fencing should be consistent with the design, style and materials of other fencing in the business park.
- Hedges, terracing and retaining walls could be used to screen servicing and utilities.
- Install fencing with consideration to avoid future maintenance issues, such as small gaps that prevent sweeping.

Top/Middle: Utilization of paving materials that are high albedo and permeable, and graded towards LID features.

Bottom: Fencing and/or planting strips used to green the rear-yard, servicing and utilities.

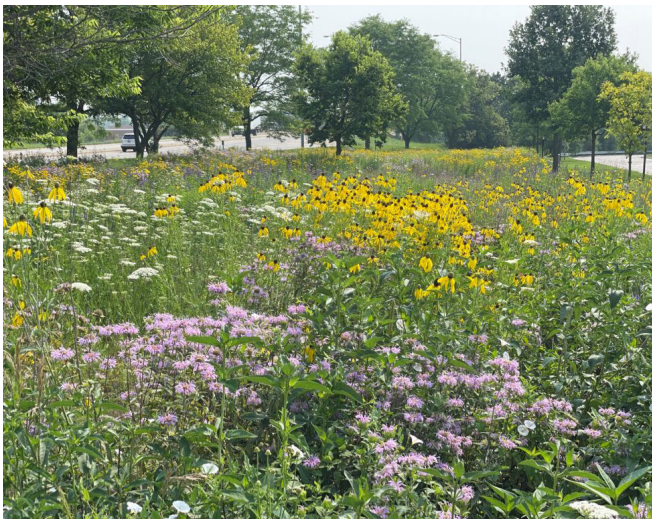
3.6 Lands Buffering the Ecological Corridor

/ Lands adjacent to the Linear Ecological Corridor are recommended to be a buffer strip of low growing native meadow that can be used for snow storage for adjacent parking lots to support hydrogeological function, phytoremediation, filtering of stormwater and groundwater recharge to ensure even seasonal flows of the nearby creek.

/ Best practices suggest grading parking lots towards this native meadow area and installing, at a minimum, a parallel recessed bioswale composed of highly permeable engineered soil (>80% sand content by volume). Maintenance of this area is one annual mowing in late fall to prevent the establishment of woody species.

/ Avoid placement of light standards within the ecological corridor buffer. Should lighting be necessary, avoid lighting in vertical excess of 4.0m in height. All lighting should be dark sky compliant with a Foot Candle (FC) rating below 0.8. An FC (Foot Candle) rating is used to measure the illuminance or the intensity of lighting.

All (Next Page): Low growing native meadows used for snow storage and other hydrogeological functions.



3.7 Stormwater Management

/ Stormwater runoff should be directed to stormwater management facilities, landscape spaces and soils.

/ Bio-swales, and other LID technologies should be used to address stormwater directly on-site, where applicable.

/ Post development site stormwater discharge shall be in conformance with the Subdivision Stormwater Management Report.

/ Where subsoils present low percolation rates, or significant impermeability (deep clay pans) detention facilities should be scaled appropriately.

/ Any volume of stormwater detained on premises should pass through an appropriately scaled oil and grit separator before being released from the property to any overland flow channel or stormwater network. Explore opportunities to create stormwater management facilities that may also function as passive recreational spaces.

3.8 Green Infrastructure (Public and Private Realm)

Green Infrastructure features should be designed in conformance with the Credit Valley Conservation and Toronto and Region Conservation, " Low Impact Development Stormwater Management Planning And Design Guide".

The Geotechnical report, soil conditions and bedrock elevation should be reviewed prior to utilizing green infrastructure and LID infiltration techniques onsite, where applicable.

3.8.1 Open Space Development

Where feasible, minimizing the footprints of structures footprint to allow for open space could be an excellent and often affordable way to achieve low impact design. By simply reducing impervious surfaces and flat sodded areas in favour of a more articulated and diversely vegetated landscape, significant services are achieveable, such as:ecosystem services in the form of site water retention, groundwater recharge, stormwater management, urban heat island effect, and ecology. With foresight and proper design, a series of bioretention facilities, ephemeral wetlands, and surrogate habitats could be incorporated, resulting in richly aesthetic place making and a substantial increase in all previously mentioned benefits.

/ Reduce the building footprint in favour of open space where possible.

/ Reduce impervious pavements and/or area of paved surfaces wherever possible.

/ Avoid or reduce flat sodded areas in favour of an undulating diversely vegetated landscape.

3.8.2 Green Roofs

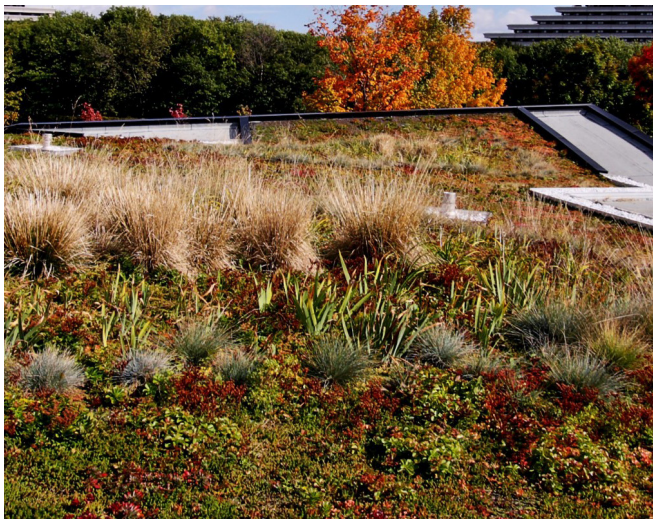
Green roofs are an effective way to filter and retain stormwater and potentially create meaningful habitat. In addition, green roofs consistently outperform traditional roof systems for lifecycle costs of structures due to longevity of roof systems and associated heating and cooling costs within the structure itself. Green roofs are encouraged throughout the business park and should reflect the best solution in balancing the ecological and financial goals of the project.

Extensive Green Roof – Lightest weight, most affordable. Require minimal if any structural consideration beyond conventional roof systems. Lowest thermal value of the types mentioned, but outperform conventional roof systems considerably in this regard. Enough co-efficient of friction and depth to reduce time of concentration of stormwater. Minimal detention/retention value. Moderate ecological value. May be lightly irrigated from STW tanks, but not necessary. Typical buildup of between 2 to15cm required.

Semi -Extensive Green Roof – Light weight, greater depth than extensive systems allowing for more water detention retention, and evapotranspiration for meeting site water budget requirements. May require structural reinforcement considerations. Ecological value greater than Extensive systems. Typical buildup of between 10 to15cm allowing for more naturalistic planting, general aesthetics, and ecological value.

Intensive Green Roof – A more robust buildup, at least 15cm depth of lightweight soil over drainage layer and waterproofing. May include irregular topography and buildup to support lignified species and habitat. Often used in tandem with amenity areas on structure. May require architectural consideration on some building types. Substantial retention/detention value. Significant habitat value. Substantial thermal improvement, heating and cooling, to associated structure. Aesthetically significant.

/ New development should consider green roofs at the time of site planning and building design, where feasible.



All: Green roofs as an effective way to filter and retain stormwater and potentially create meaningful habitat

3.8.3 Rain Gardens and Infiltration Galleries

Rain Planters

Rain planters are containers of varying sizes built into a structures drainage system intended to support vegetation. Basic applications would see downspouts or roof drains flowing into/through these volumes and their fill (majority sand with compost, mineral soil component) before exiting to the next phase of site drainage. The size and shape of rain gardens are scaled to the volumes to be conveyed. Properly designed, these installations often absorb the total input from brief, low intensity storm events. Larger storm events typically result in a given storage provided, with excess volumes expressing as surface flow across/through the installation, which must be accounted for in design. Typically an engineered soil used in low impact development systems (L.I.D.) represents 40% void space, meaning 40% of the planter volume could be factored, essentially, as a stormwater tank. Overflowing stormwater should be directed to a drain that is connected to the storm drain system at a ponding depth of 200mm minimum to avoid deep ponding

Infiltration Galleries

Rain terraces are an evolution of the rain garden concept. Larger in surface area and volume, where the planter supports vegetation, the terrace is an inhabitable space attached to, on, or near the architecture it is serving. Amenity terraces, outdoor patios, and “decks” are all architectural forms well suited to rain terraces. Filled with sand, or structural soil/pavement supports and bioswale medium, a given depth is provided for the detention/retention of the buildings associated stormwater, potentially rendering stormwater tanks as unnecessary. While fed by downspouts and roof drains, rain terraces are well suited for permeable pavers which feed rainwater contributions to its surface directly into the system. Note that large growing shade trees and gardens may be incorporated into these systems as well, assuming that 1.0m minimum soil depth can be provided over the infiltration gallery, typically significantly improving performance, habitability, and aesthetics.

/ When developing outdoor amenities as part of, attached to, or in reasonable proximity to structures, consider employing rain terraces as a component of L.I.D. and building drainage systems.

Top & Middle: Examples of rain planters

Bottom: Example of rain terraces

3.8.4 Bioretention Facilities

- Bioretention facilities should be sized appropriately to accommodate runoff from all adjacent impermeable surfaces. Refer to most recent local design guidelines.
- Snow storage areas, parking lot islands, traffic islands, roundabouts, cul-de-sacs, and planting beds adjacent to hardscaped areas should all be considered for bioretention facilities.
- Multiple smaller facilities designed in a series should be explored where surface area is limited.
- Proper spacing should be provided for above-ground and below-ground utilities and adjacent infrastructure including structural foundations. Consult local utility companies to confirm required separation distances to the bioretention facility.
- Bioretention facilities with no impermeable liner designed into the system are encouraged to allow for infiltration into the subsurface soils. Where located near architectural foundations, a 5.0m setback should be provided. When an impermeable liner is designed into the system, no setback is required.
- Bioretention facilities with full sun exposure should ensure robust deep rooting vegetation to improve performance through evapotranspiration and low-level phytoremediation. Groundcover plants with extensive rhizome and shallower root structures can also provide these ecosysterm services.
- Bioretention facilities in shady locations may be considered, such as employing shade tolerant species of grasses, forbs, shrubs, and trees. These facilities may not be as effective in terms of filtration or phytoremediation, phosphorous reduction, etc.
- Native plant species should be used where planting is proposed. Native plants are recommended to support healthier ecosystems.
- While swales and linear systems are effective and are often an easier fit for the built environment, irregular shapes varying in width, number and size of low points should be considered to improve edge conditions and general performance. This type of system design is preferable where space permits.
- Properly designed and vegetated bioretention facilities could become attractive gateway or entryway features.

Top: Bioretention facilities

- Naturalized landscaping is encouraged to make a bioretention facility “disappear” into the surroundings.
- Bioretention areas subject to roadway and parking lot runoff should be composed of salt tolerant grasses and forbs. For such areas not intended for snow storage, salt tolerant woody species may also be included.
- Bioretention areas should be kept offline until construction is complete, the drainage area stabilized, and vehicle mud tracking has stopped in order to avoid clogging of facilities.
- Where open space is limited, assemblies of structural soil cells/pavement supports should be designed as part of bioretention facilities to increase subsurface stormwater storage and filtration.

Depth of Filter Media

- Minimum 0.3m: Will support drought tolerant grasses and perennials.
- Minimum 0.6m: Will support the above AND shrubs.
- Minimum 1.0m: Will support the above AND trees.
- Depths beyond 1.0m depth are encouraged where feasible and runoff calculations show needed capacity.

3.8.5 Permeable Pavements

When properly designed and maintained, permeable pavements could serve as key features to a site's design using L.I.D.. Much like green roofs, types and performance of materials and systems exist on a spectrum, with the right system for the right space key to success.

Open Grid Paving Systems – Typically constructed from recycled plastic materials, these durable engineered and durable interlocking honeycomb-esque grids (variably, depending on manufacturer) sit on a substrate of free-draining aggregate and are filled to level with washed pea gravel. Could drain to freely draining subsoils, or be drained by perf-pipe, or cover a subsurface infiltration gallery. Relatively low cost and long lifespan. Suitable for flat areas such as parking lot.

Note: Many of these systems could also be planted with low growing herbacous plants such as grass, microclover, or sedum with a slightly different buildup. However, turf, or grass planted installations are best reserved for lower traffic areas such as parking stalls, end of parking stall, visitor parking, etc.

Open Grid Unit Paving – Similar to the above mentioned in application, Open Grid Unit Paving is constructed of interlocking durable single concrete paving units. They are more durable, and refined than the plastic systems lending themselves to more formalized applications. Achieving plant growth within the more open cells is easier to achieve. Highly permeable.

Permeable Unit Paving – Typical interlocking unit pavers designed to be permeable, typically designed with larger gaps between the pavers, filled with small chipped stones to allow stormwater to flow through. Products available today perform much better than those of the past. Of the three mentioned, the most durable, formal, and flexible in terms of application. May be used anywhere vehicular paving is required. Due to cost, best reserved for parking stalls, layby parking, walkways, and entry ways. Wide range of colors, sizes, and laying patterns.

/ Wherever feasible on site, permeable paving, whether one type, or a mix, should replace asphalt paving and concrete.

3.8.6 High Albedo Paving

High albedo paving is a mineralized paving material with a solar reflective index (SRI) greater than 29. Materials with this rating reflect the majority of the sunlight’s energy, significantly reducing thermal gain, and therefore, the urban heat island effect. Both types of Unit paving mentioned above, as well as concrete paving could meet high albedo metrics.

/ All paved areas and on-site walkways should be predominately high albedo.

Left Top: Crushed limestone parking lot with native meadow L.I.D. and snow storage space. Credit: DIRT Studio

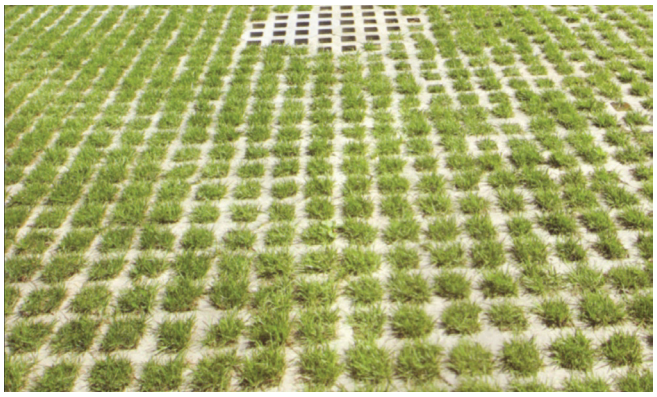
Left 2nd from Top: Geo grid Type Parking lot with crushed stone

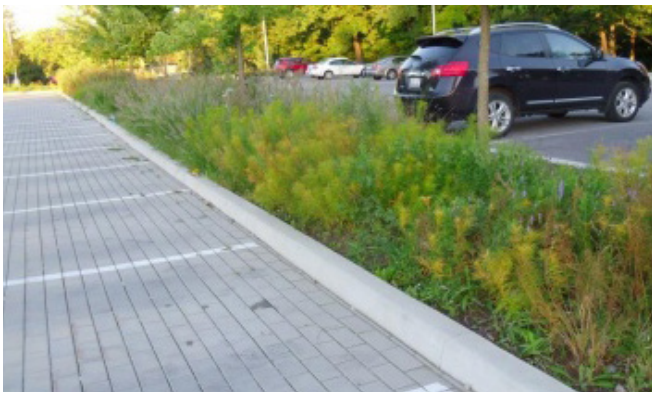
Left Third: Typical Permeable Paving. Seen here laid in "herring bone" pattern known for rigidity and ability to take heavy vehicular traffic. Can be used in pedestrian settings as well.

Left Bottom: Turf Pave system. Highly permeable parking option. Can provide pollinator habitat when white clover is included in seed mix

Top Right: Permeable paving serving double duty; pedestrian and occasional vehicular traffic..

Bottom Right: Permeable parking stalls adjacent to native vegetation bioswale with snow loading capacity.





4.0 PRIVATE REALM GUIDELINES (SITE DESIGN)

4.1 Site Design

4.1.1 Building Orientation and Massing

/ Buildings should be oriented to take advantage of similar landscape themes and elements, common access and other similar features.

/ Buildings should be sited close to and framing the street to create a sense of enclosure and to enhance the pedestrian realm.

/ When buildings front onto two or more public streets, buildings should be located close to each street to frame the corner and reinforce their focal point.

/ Buildings should be located at the minimum setbacks to limit parking facilities along the street frontages, where possible.

/ Locate and orient buildings to maximize solar gain, daylight harvesting and natural ventilation to support climate resilience.

/ Building siting and orientation should encourage and allow for flexibility to support changing business needs, growth, and adaptability.

/ Building footprints and siting should allow flexibility for future growth, ensuring businesses could scale or re-purpose spaces in response to market needs.

/ Should expansive blank facades be necessary for architectural programming (i.e. storage bays), they should be oriented toward the rear of the site. Where blank facades are required, tree and shrub plantings in front of them are recommended to soften them.

All: Building designs that are oriented towards the street, parking area and outdoor amenity areas and gather spaces. Buildings articulated to frame key gateways and highlight primary building entrances.

4.1.2 Parking, Loading and Access

- Developments should reduce the number of parking spaces provided to facilitate opportunities for increased landscaping and amenity areas.
- The amount of the site used by parking should be as minimal as possible, while still providing efficient site circulation and meeting functional needs.
- Parking within the front and exterior side yards is discouraged to minimize the impacts on street frontages. Where possible, parking should be located behind buildings or within the side yard.
- Where parking is provided in the front yard, it should be prioritized for accessible, visitor and electric vehicle parking.
- Where parking in the front yard is provided for practical reasons, enhanced landscaping and multi-level landscaping along the street edge is required.
- Where surface parking lots on neighbouring properties are located adjacent to each other, a coordinated landscape strip should be provided.
- Landscape strips should be at least 3.0m and/or wide enough to plant trees and/or other landscape edge treatments. Where 3.0m wide planting buffers are not feasible, structural soil cells/paving supports are encouraged to compensate for soil volumes and LID potential.
- The length of continuous parking aisles should be limited. Landscaping should be used to define smaller and more attractive parking courts.
- Landscaping in parking areas should be maximized to improve stormwater retention and management.
- Where possible parking should be screened from view at the sidewalk level by using landscaping or other interesting visual features.
- Surface parking areas should utilize high-quality landscaping, lighting and pavement materials, and should include pedestrian infrastructure such as benches, trash receptacles and lighting.
- Solar arrays should be considered for use as shade structures throughout parking areas.
- Herringbone parking, or 45-degree angled parking strategies should be considered to reduce paved areas.
- Parking areas must provide safe and continuous pedestrian pathways to building entrances that are clearly distinguishable from vehicular routes.
- High branching deciduous trees should be planted within the parking lot at a ratio of 1:5 trees to every parking space.
- Shared access is encouraged to parking, servicing and loading areas to minimize curb cuts.
- Where possible, shared parking between adjacent sites is encouraged to reduce the total number of parking spaces required for each site.
- Shared parking and loading areas are encouraged to reduce individual site infrastructure and improve land use efficiency.
- Secure and highly visible bike parking should be provided near building entrances and access points. Weather protection for bike parking areas should be considered.
- Bike infrastructure and EV charging stations should be prioritized to support low-carbon transportation choices and reflect long-term operational affordability and resilience.

Top: Reduction in parking stalls provide additional opportunities for landscaping and planting.

Middle: Parking areas are screened and lined with landscaping and planting strips.

Bottom: Bike infrastructure such as covered storage support active transportation.

4.1.3 Utility and Service Areas

- Loading and service areas should be located away from public roads, in the rear or interior side yard, where necessary, to ensure they will not be a prominent feature of the streetscape or building facade.
- On corner sites, loading, servicing and storage areas should be located along non-street frontages.
- Open storage should be located to the rear of a site, so it is not visible from the street.
- Loading and service areas should be integrated into the building, where possible. Where this is not possible, they should be visually and audibly screened from view using landscaping, earthworks, fencing or walls composed of materials that are consistent with the architectural design of the building.
- Visual and acoustic screening should be considered where loading and services areas abut active uses. This could be further supplemented with landscape buffering.
- Natural screening solutions (e.g., hedgerows, berms/earthworks with native evergreen shrubs and/or trees) that contribute to habitat and landscape resilience should be considered.
- All loading and deliveries should be conducted from within the site and not from vehicles standing curbside in laneways, rights-of-way or in any public street.
- Site circulation should not be impeded by loading or servicing areas when occupied.

Top: Loading and servicing areas are located away from primary street frontages and visually screened.

Middle: Nature-based screening solutions employed to screen loading and servicing uses

Bottom: Dumpster areas with vegetated screens. Geo-grid type paving allowing access by heavy trucks.

4.2 Built Form

4.2.1 Height, Massing and Setbacks

/ Wherever possible, the height, massing and building envelope of new development should mitigate the negative impacts of urbanization by strategically enhancing a buildings environmental and energy performance, and by promoting the principles of multi-species building design to sustain urban ecosystems.

/ The height and scale of development should integrate with the existing and future context and surrounding developments.

/ Taller buildings may be considered at gateway or landmark locations or for less intrusive uses such as corporate offices, research and development and/or complementary uses.

/ Development on a block can be organized into a series of smaller buildings to create a campus-style development that facilitates vibrant and active outdoor amenity areas.

/ Adjacent developments and multiple developments within a single site should provide variation in height and massing to create visual interest from the street and public realm.

/ Taller ground floor heights of 4.5m are recommended to create a strong visual appearance along the street and to facilitate servicing and loading facilities interior to the building where possible.

/ Where ground floor heights exceed 6.0m, additional architectural treatments should be considered to make the building appear at double height.

/ Taller buildings at gateway locations should be designed and massed to reinforce their prominence through unique corner treatments, higher quality materials, enhanced setbacks and other treatments.

/ Taller buildings (i.e. above 3-storeys) are encouraged to utilize stepbacks and other design features to mitigate the bulk of the building and to reinforce the pedestrian scaled landscapes.

/ Mechanical equipment should be located away from roads and appropriately screened from public view with materials that are consistent with the architectural character of the building. The use of parapets along with other creative screening methods is encouraged.

Top: Height and massing of buildings respond to the surrounding context, taller heights may be appropriate at landmark locations.

Middle: 1 to 3-storey buildings are generally appropriate with taller heights located at landmark locations.

4.2.2 Façade Articulation and Entrances

/ Building entrances should be located on the public streets.

/ Entrances should be clear and highly visible and should be directly linked to adjacent walkways, bike parking, and parking areas.

/ Canopies, awnings, double height glazing or taller, non-habitable structures should be used to emphasize main entrances.

/ Weather protection should be provided at both main and secondary building entrances/ in the form of covered walkways, canopies and/or awnings.

/ Building facades should contribute to a positive and engaging streetscape. All buildings should locate their most active components (i.e. offices, reception areas, amenity areas, and meeting spaces) as close to the street as possible.

/ Building facades should use a mix of complementary materials to create a simple modern architectural style that reflects the business park or industrial character of the street and context.

/ Where buildings have a large warehouse component, the design and articulation may be simplified provided an attractive street frontage is maintained. Materials and colours should be complementary to the street facing components of a building.

/ A significant amount of glazing should be provided on the ground floor of buildings to create visual interest along the street. This should include regular windows but also more substantial glazing treatments such as double-height windows and prominent glazed street facing building elements. All glazing should be clear glazing and bird-friendly.

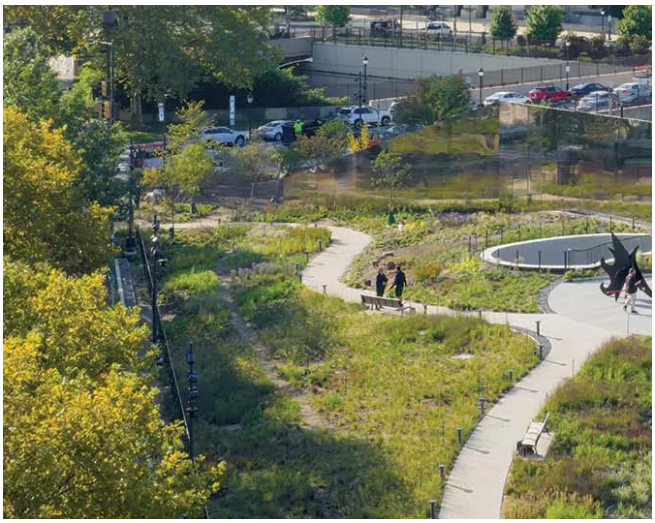
/ Architectural elements should be used to create a varied and attractive streetscape and public realm. This includes the delineation of key building elements (i.e. corner entrances) through unique colours, materiality, and architectural features (i.e. rooflines, overhangs, columns, cornices, and canopies, etc.).

Top: Clear and visible building entrances. Articulation of built form used to highlight building entrance.

Middle: Active components located close to the street, weather protection provided at main entrance.

4.2.3 Materials and Building Performance

- / A high standard of design and a variety of high-quality materials should be utilized on all public frontages to create an attractive street presence.
- / Materials used for the front facade should be carried through the building. Where a facade is generally not visible from the public realm, alternative materials may be considered.
- / Building materials should be considered for their function and aesthetic quality, as well as their energy and maintenance efficiency.
- / Building materials and finishes should be complementary.
- / Clear glazing is recommended for all at-grade glazing to provide a high level of visibility and transparency.
- / For all glazed surfaces, bird-friendly treatments (i.e. fritted, frosted or patterned glass) are recommended to make windows more visible to birds and to reduce collision risk.
- / Large sections of glazing should be broken up or minimized, particularly near vegetation and naturalized areas in order to create more bird-friendly interfaces.
- / Mirrored glazing and/or building cladding are discouraged.
- / The use of recycled materials should be considered for the construction of buildings to minimize extraction, production and transportation cost, where possible.
- / Living walls and other green materials are recommended to create visual interest and to maximize solar benefits.



Top: Materials along primary facade carried over to other building frontages.

Middle: Mid-block pedestrian connections be provided where possible to create permeability and promote active transportation.

Bottom: Living wall facade coverings are affordable compared to building lifecycle cost and ecological benefits.

4.2.4 Lighting, Signage

- Lighting should be dark sky compliant.
- Dark sky compliant pedestrian-scale lighting should be provided along key pedestrian routes with a height not exceeding 4.0m.
- The location of dark sky compliant street lighting should be coordinated with landscaping elements to avoid screening of illumination and shadow effects.
- Outdoor lighting of buildings should be placed strategically to reduce the unnecessary usage of energy while preserving Crime Prevention Through Environmental Design (CPTED) principles.
- Lighting standards should avoid upward spill lights; under-illumination of public areas; over-illumination of private areas; unnecessary colouring of regular lighting; lighting fixtures that interfere with the architectural expression of a building; and low-quality fixtures.
- Lighting should not disrupt natural ecosystems.
- Avoid excessive lighting in ecological corridor buffers.
- Consider using lighting with cut-off shields to prevent light spillage into natural areas and the IFSGG lands.
- Explore options to provide solar-powered streetlights and pedestrian lighting, where possible.
- Lighting design should aim to create an even flow of low level, clear illumination devoid of dark spots and excessive contrast.
- The location and design of signage and wayfinding should be considered as part of a broader strategy for the business park, and should include street signs, directional signage and informational signs.
- Signage should be provided at decision making points and areas with higher volumes of pedestrians.
- Signage should be consolidated to maximize information and minimize visual clutter.
- Signage should be located within a designated landscape area and should not impede the sidewalk.

Top: Dark Sky compliant lighting at parking lot and walkways.

Bottom: Ecologically focused interpretive signage educating users of the natural communities and systems present on site.

- The scale and design of signage should reflect the intended user. For example, signs for pedestrians should be low and sized to not overwhelm the field of view. Signs for drivers should be larger and easily located and read from a passing vehicle.
- Signage should be intuitive to read or understand. The use of plain language or universally recognized symbols and icons are recommended.
- Opportunities to provide educational or informational signage along active transportation corridors and public spaces should be considered to support learning, cultural awareness, and environmental stewardship.
- Wayfinding elements and interpretive signage should consider Indigenous languages, symbols, and storytelling narratives to communicate placekeeping values.

5.0 Implementation

5.1 Planning Process

As noted in Section 1.4 of these Guidelines, Section 8 of the Official Plan provides policies regarding Urban Design and specifically contemplates the creation of urban design guidelines for specific types of development, for certain areas of the City or for the entire City. Further, Section 8 also notes the City will implement urban design policies through one or more of the following mechanisms:

a. zoning, site plan control review and related guidelines, subdivision design guidelines, urban design guidelines, a sign by-law, guidelines for persons with disabilities, or any other relevant guideline adopted by Council;
b. the preparation and implementation of community improvement plans and programs, as budget permits;
c. the design, construction, and installation of public works or facilities;
d. the preparation or approval of heritage conservation district plans, secondary plans or other planning exercises; and,
e. consultation with the private sector with respect to development applications

The Site Design Guidelines will be presented to Council for endorsement and will be implemented through a combination of Planning Act tools including zoning, site plan control, and plan of subdivision. In addition, other tools not directly such as agreements of purchase and sale and development agreements, will be leveraged to support implementation.

Where possible, these guidelines have been implemented into the site-specific zoning for the St. Lawrence Business Park Expansion Lands through the provision of including but not limited to bike parking, outdoor storage, landscaped open space, and parking.

These guidelines have also been implemented into the proposed draft plan of subdivision via the creation of blocks intended for open space, the alignment of streets that contemplate natural heritage features and the existing and future road network, and the creation of blocks intended for development which varies in size. These guidelines will further be implemented as part of the final plan of subdivision which addresses detailed design measures such as street design including active transportation and paving types, location of sidewalks, bioretention, and lighting.

Aspects of these guidelines including but not limited to access and circulation, lighting, garbage storage, and grading and drainage will be further implemented through site plan control. Site plan control is a planning tool which can be used by municipalities, such as the City of Kingston, to evaluate certain design elements of a proposal. The site plan control process is to ensure detailed design measures meet the standards set by the City of Kingston, which can be enforced through a site plan control agreement.
Where these guidelines are not captured as part of zoning, site plan control, or plan of subdivision, they will be captured in a development agreement mandated through an agreement of purchase and sale of the individual commercial or business park industrial blocks. A development agreement is intended to be drafted on a block-by-block basis associated, tied to the sale of an individual block to capture aspects of these guidelines which have not been met through the other processes previously noted.

These guidelines are also to be adopted by Kingston City Council at a City Council meeting where council will recognize the intent of these guidelines formally.

5.2 Monitoring and Updates

These guidelines are intended to be reviewed and updated periodically. Generally-speaking, as new business parks are developed through a subdivision process, it would be appropriate to use that process as a trigger to review and update these guidelines alongside the design and implementation of the subdivision.

5.3 Evaluation Criteria

Proposals will be subject to review by the Evaluation Checklist provided within the Appendix of this document.

APPENDIX A:
Evaluation Checklist