

PEARSON ECO-BUSINESS ZONE POLICY TOOLKIT



POLICY TEMPLATES/TEMPLATE
LANGUAGE

CONSIDERATIONS FOR ECO-BUSINESS
ZONE DEVELOPMENT STANDARDS

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Description

Development Standards and Design Guidelines are effective tools used by municipalities to ensure that sustainability objectives are met by development projects. Although municipalities might have different terminology for these tools, they serve a common purpose: Development Standards (such as the Toronto Green Standard) and Design Guidelines (such as Brampton's forthcoming Sustainable Development Guidelines) provide an integrated set of performance measures, principles and targets, to promote innovative and desirable forms of development (such as green design, high quality urban design, and Crime Prevention Through Environmental Design).

Design Guidelines in other eco-business zone projects provide both required and optional measures. Sometimes, these performance measures are integrated into the development permitting process, and in other cases they are left as standalone documents that are completed in addition to other approvals. In this sense, they function in a similar manner to the Toronto Green Standard as well as Development Guidelines in other partner municipalities. In this document, the term 'Development Standards' is the preferred term to identify design considerations, performance measures and targets for promoting green development in the Pearson Eco-Business Zone¹¹.

This document presents some of the key considerations when creating Development Standards for the Pearson Eco-Business Zone¹². These considerations take into account the current Toronto Green Standard, and build off of this to provide more specific guidance for achieving the type of eco-business zone activity and development expressed in the Partners in Project Green Strategy¹³. These considerations can be used to inform forthcoming green Development Guidelines in Mississauga and Brampton, future Official Plan/Secondary Plan Policy and Development Permit System criteria.

Eco-Business Zone Development Standard Topics

Development Standards should address as much of the development cycle as possible. The following list of considerations provides guidance in this respect. Much of the Pearson Eco-Business Zone is already built-out, which will come into play here. The design considerations below provide general principles that can facilitate eco-business activity, and are generally equally applicable to greenfield and redevelopment/retrofit scenarios. *A few considerations are primarily relevant to greenfield development, as they offer potential benefits to subdivision-scale, or infrastructure-related design opportunities or strategies for leveraging public lands – these are noted with asterisk(*)*.

Pre-Development Planning

Identifying and evaluating opportunities for enhanced performance through joint efficiency initiatives is essential to successful eco-business zones and should be considered at the earliest stages of development planning. Standards to inform pre-development planning and discussions should consider:

- Integrated Design¹⁴: This is the time at which the developer should consider an integrated design process to identify and take advantage of potential synergies between different building systems, infrastructure and industrial processes. Development Standards should encourage this.
- Anticipate Resource Use: Eco-business zones derive competitive advantage from developing and maintaining efficiencies by sharing resources, wastes and services among its businesses. Consider standards to require information regarding the potential resource needs and waste streams from the proposed business and how they impact the proposed development. Confidentiality is key to ensuring businesses are more willing to participate in such data gathering activity.
- Encourage industrial infill and reuse of existing buildings and facilities.

Parcel Layout and Design

The layout of the site (or a subdivision), including the location and orientation of buildings, has a significant impact on the site's appearance and economic and environmental performance. Eco-business zones encourage convenient linkages with adjoining businesses and access to nearby public lands or open space. Site layout considerations for eco-business zones include:

- Strategies to maximize building orientation to facilitate passive heating, cooling and ventilation.
- Strategies to maximize land use efficiency and reduce development footprints, such as with stackable warehousing options, joint logistics facilities and building clustering.
- Facilitate shared service and access areas with adjacent parcels.
- Support the concept of 'utility islands' to promote potential synergies between different infrastructure systems.*
- Leverage easements to allow future business-to-business infrastructure connections.*
- Diversity in parcel sizes to increase potential for by-product synergy.

Access and Movement

Safe and efficient movement of people and goods within eco-business zones is essential, but at the same time, transportation and related infrastructure can be costly to build and maintain and can have significant environmental impacts. To encourage multi-modal transportation options for goods and people, consider the following:

- Ensure site design accounts for safe movement of goods alongside different modes of transportation including cycling, transit and walking.
- Minimize all paved surfaces.
- Make the best use of utility rights-of-ways by combining multiple purposes.*

Landscape and Open Space

Landscape design in eco-business zones can create a pleasing and attractive business environment, maintain the natural character of the site, protect its ecological integrity, and contribute to energy and water efficiency. To maximize effective use of landscaping, consider:

- Create continuity of landscaped and outdoor amenity areas as much as possible with those on adjacent parcels.
- Take advantage of landscape design to minimize energy requirements for buildings.
- Integrate ecological features and functions into landscape design.

Energy

Reducing greenhouse gas emissions is not only a key objective in the Pearson Eco-Business Zone, but also fundamental to all municipal Official Plans and many related strategies and action plans. Any development standards should encourage site design and business operations that reduce energy consumption and increase renewable energy use. Standards should consider encouraging or requiring practices that:

- Reduce the energy consumption of buildings and operations.
- Promote district energy systems or at least site-to-site energy sharing such as joint backup systems, or using the waste heat from one building to heat the one next door.
- Produce energy on-site from renewable sources or waste.
- Minimize lighting demand.

Water/Wastewater/Stormwater

Partners in Project Green aims to reduce water consumption within the Pearson Eco-Business Zone. Addressing water efficiency, consumption and recycling will also help municipalities satisfy related policies in their Official Plans and complement the overall objectives of other programs aimed at reducing commercial water use. Any development standards should encourage practices that:

- Minimize water consumption.
- Recycle water.

¹¹These should not be confused with municipal engineering and design standards, which address the specific technical requirements for development and infrastructure.

¹²It is assumed that these new Green Standards will reference the Toronto Green Standard as a starting point.

¹³The Strategy may be viewed here: <http://www.partnersinprojectgreen.com/strategy>

¹⁴An Integrated Design Process involves collaboration between a range of participants involved in the design of a building (or sometimes, a site or subdivision), including: architects, engineers, owners, potential tenants, contractors, and suppliers. The team engages in collaborative meetings from pre-design right through design development to construction. This approach allows design from a whole systems perspective to find potential for collaboration and eliminating conflicts between building/infrastructure systems to reduce costs/resources. This approach consistently achieves higher performance projects, often with little or no cost premium.

- Use reclaimed wastewater or stormwater for business operations or processing, or allow businesses to recover and use 'clean' wastewater from each other.
- Apply Low Impact Development to stormwater management, such as green parking lots.

Facility Design, Construction and Operation

Most of the Pearson Eco-Business Zone is built-out. Substantial green building retrofits are being promoted by the Building Performance Team. Development Standards should apply to both new and retrofit developments. Within the Pearson Eco-Business Zone, the goal is to create a high-quality environment to attract and support high performing, innovative, and leading edge industrial and commercial development. Development Standards should encourage practices that:

- Permit physical building-to-building linkages with other parcels, so long as vehicle and pedestrian access are not impacted.
- Require a construction management plan to reduce greenhouse gas emissions, minimize waste, support recycling, and minimize site disturbance.
- Support collaboration with neighbouring businesses, such as joint purchasing, shared services, and coordinated resource use (such as heating and cooling).
- Establish a minimum Floor-Area Ratio (FAR) or preferred building size and supporting intensification.

Other Resources

Toronto Green Standard - Low-Rise Non-Residential:
www.toronto.ca/planning/environment/greendevlopment.htm

Toronto Green Standard - Staff Report: Performance Measures:
www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-23569.pdf

REFERENCE CASE STUDIES

- **Devens Enterprise Commission** – integrates green development standards into approvals process.
- **TaigaNova Eco-Industrial Park** – integrates design guidelines into development permitting process.
- **Innovista Eco-Industrial Park** – sustainable design guidelines for eco-industrial park.
- **Menomonee Valley** – sustainable design guidelines for large-scale industrial redevelopment in Milwaukee.

To view the case studies, please visit
www.partnersinprojectgreen.com/policytoolkit