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Best Practice Guide:
Sustainable Parks and Open Space Design

Winter, 2009

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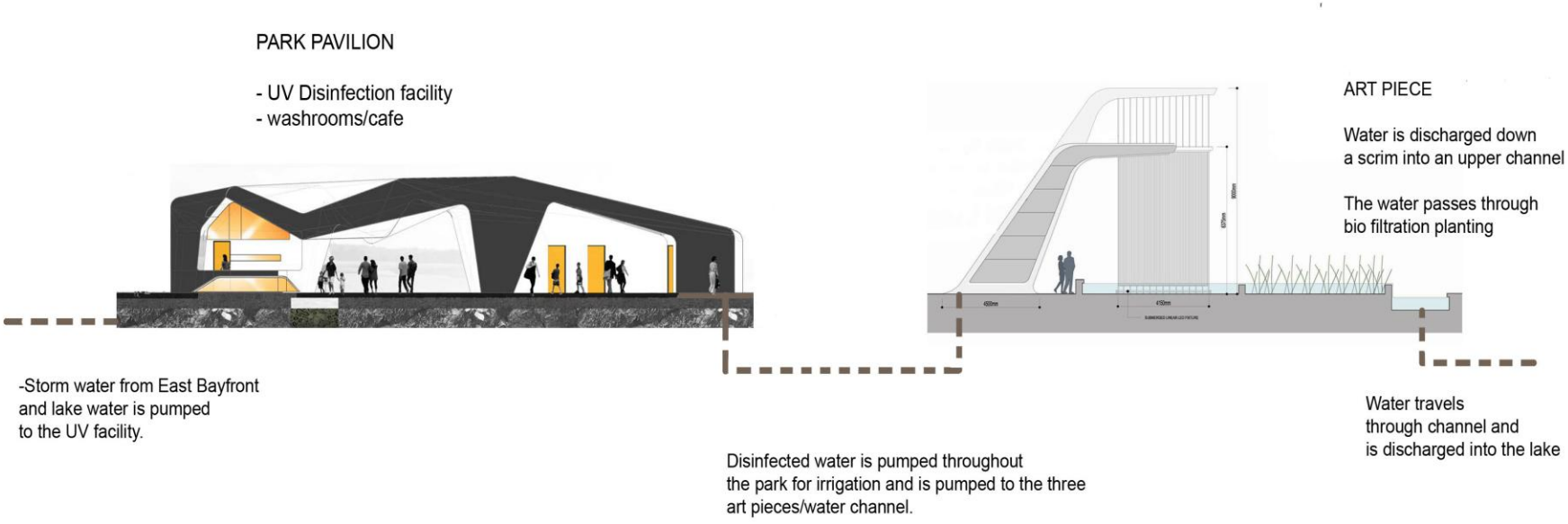
Table of Contents

Sustainable Parks and Open Spaces: Introduction



The artwork…showcases the sustainable principles of Toronto's new waterfront in action within an integrated and expressive composition. The work aspires to reconnect everyday life to the natural world on which human life depends and to engage people directly, revealing the connection of the park and its visits to the environment at large.

Source: Fl'eau Conceptual Design

Beyond a change in basic approach, sustainable site design requires holistic, ecologically based strategies to create projects that do not alter or impair but instead help repair and restore existing site systems. Site systems such as plant and animal communities, soils and hydrology must be respected as patterns and processes of the living world. These strategies apply to all landscapes, no matter how small or how urban.

Source: U.S. National Parks Service: The Sustainable Practices and Opportunities Plan

1.0 INTRODUCTION

Waterfront Toronto's Commitment to Sustainable Communities

In 2001, Waterfront Toronto (WT) was created for the purpose of overseeing the revitalization of 2,000 acres of prime waterfront land adjacent to downtown Toronto. Its vision is to create vibrant, sustainable communities where people want to live, work, study and play along the water's edge.

A central component of Waterfront Toronto's sustainability mandate is a vision of the City of Toronto at the forefront of global cities in the 21st century through the creation of sustainable communities that are largely defined and connected through its parks and open spaces. In striving for this goal, Waterfront Toronto's *Sustainability Framework* is the policy foundation upon which sustainable parks and open space planning, design and construction must take place.

In 2005, the *Sustainability Framework* was released, setting out Waterfront Toronto's vision and action plan over the long term. Five outcomes were identified that reflect the characteristics sought for revitalized waterfront communities:

1. Sharing the net benefits of sustainable development with the City and surrounding region - **NET PLUS™**
2. The City of Toronto as a **Global Hub of Creativity and Innovation**
3. A waterfront that has the feel of **The Urban Cottage**
4. A waterfront that **Feels Like Home** to everyone
5. Developing strong systems that contribute to **Strength through Diversity**

The sustainability best practices set out in Sections 6.1 to 6.11 reflect various possible ways in which these desired outcomes can be achieved.

The best practices are organized under 11 interrelated sustainability themes and their associated goals, as follows:

1. **Energy:** Reduce levels of energy consumption and make greater use of low-impact renewable energy sources to meet energy demands
2. **Land Use:** Support sustainable community development through land use planning
3. **Transportation:** Make alternative transportation options such as walking, cycling and public transit the natural choice for residents and visitors to the waterfront
4. **Sustainable Buildings:** Use architectural building systems that reduce negative environmental impacts and provide high indoor air quality and exceptional comfort
5. **Air Quality:** Minimize pollutant emissions on the Toronto waterfront to help improve air quality in the city and throughout the region
6. **Human Communities**: Plan for vibrant, welcoming, healthy and inclusive waterfront communities
7. **Cultural Resources:** Plan for a high level of cultural vibrancy and creativity
8. **Natural Heritage:** Enhance the environmental integrity of the Toronto waterfront
9. **Water:** Improve water quality along the Toronto waterfront and reduce consumption of fresh water
10. **Materials and Waste:** Reduce waste production over current levels and minimize the use of resources for the production of buildings and other materials
11. **Innovation:** Encourage innovation as a means to make the Toronto waterfront the foremost example of sustainability and a centre for creativity and knowledge

2.0 Best Practice Guide Objectives

Using This Guide

The objective of this guide is to provide best practices for parks and open space designs that meet the goals outlined for each of the 11 themes in the *Sustainability Framework, 2005*. It is intended to stimulate the imagination and encourage further research so that innovative techniques, materials and designs are considered for integration into the various stages of the planning, design and construction processes.

As best practices and resources available for implementing parks and open space designs are constantly evolving, this guide is a starting point for ideas rather than a step-by-step guide on how to develop sustainable parks or open spaces. Much depends on characteristics such as the intended use of the park or open space (function), location and site attributes, and on factors such as project budget capacity and operation and maintenance requirements once a park or open space is ready for use. It is up to the individual design team to identify and build on innovative practices that are suitable and compatible for any given design context and to take into account present and future fiscal sustainability.

Application of This Guide

The best practices in Sections 6.1 to 6.11 apply to lands within Waterfront Toronto's designated waterfront area (Diagram 1). They are neither specific to any one park or open space nor are they universally applicable. For example, practices related to water conservation may not meet the needs of a land-based park. It is important to remember that the applicability of each best practice must be evaluated on a project-specific basis.

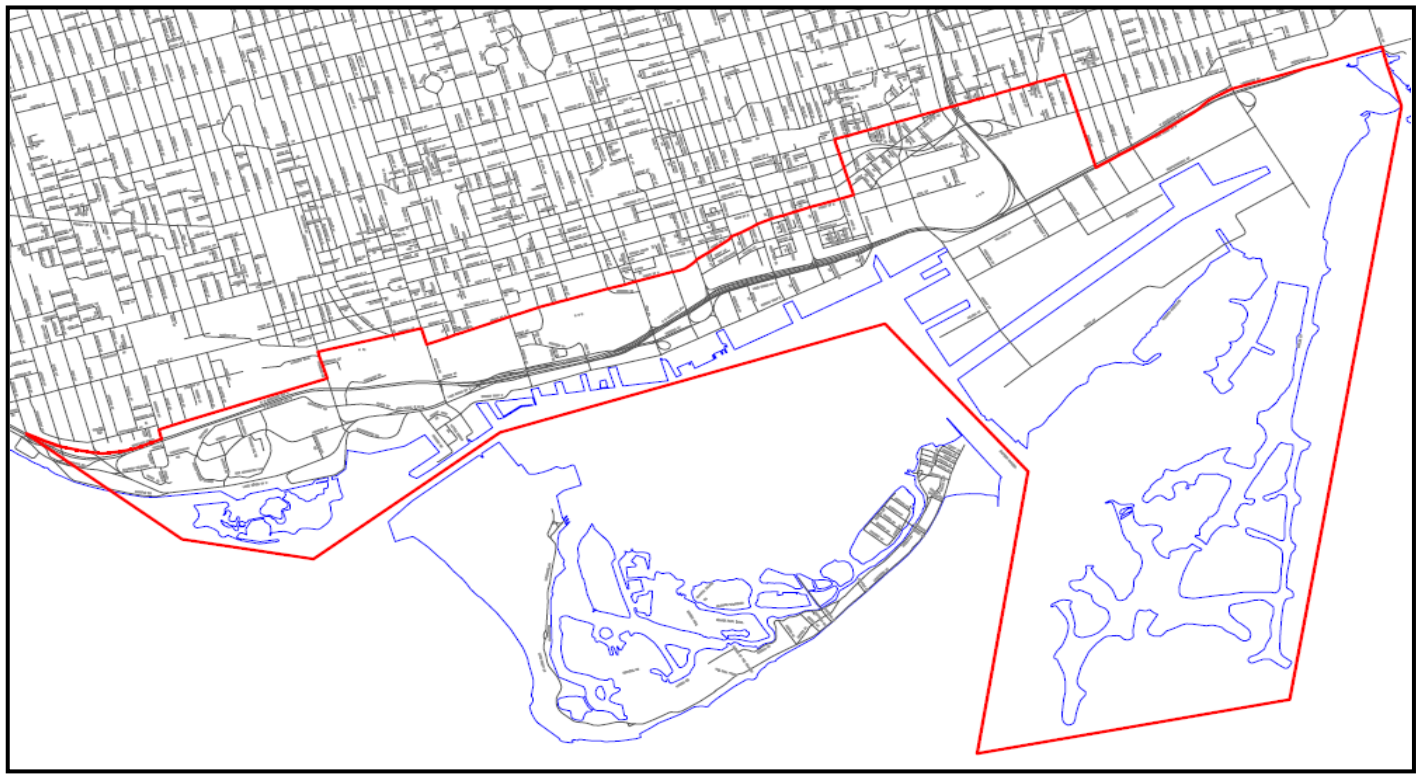
In addition, best practice objectives may conflict with one another. For example, bicycle and pedestrian paths could conflict with conservation or habitat-creation goals. These competing objectives must be resolved on a case-by-case basis during the initial design stage when the overall objectives and design principles for a particular park are being established, considering the larger context of the waterfront.

It is recognized that parks can include built structures ranging from small comfort stations to extensive recreational complexes such as swimming pools, indoor arenas and outdoor amphitheatres. With the exception of energy and water conservation practices related to small

comfort stations, sustainability practices for buildings are not addressed in this guide. Readers seeking guidance in this area are referred to existing literature on sustainable building practices, including Waterfront Toronto's *Mandatory Green Building Requirements, 2007* and the *Toronto Green Development Standard* documents.

While the best practices in this guide relate to the design and planning of parks and open spaces, some practices can be applied at the construction stages. When thinking about and implementing sustainability at the design stage, consideration also needs to be given to the resulting operations and maintenance of any park or open space, in terms of environmental and fiscal sustainability. For example, if drought resistant plant species are used in designs, then relatively low upkeep (i.e., less water) is required to care for these plants during the operation and maintenance phase.

Diagram 1 – Designated Waterfront Area



"Sustainable management practices and design and construction techniques that have minimal environmental impacts and return the greatest ecological rewards will be utilized in waterfront parks."

Source: Central Waterfront Secondary Plan. Toronto City Council. November 2007

3.0 Who Can Use This Guide

This guide is for the use of park and open space designers, planners and managers. It may also be of interest to community groups and individuals who wish to learn about potential approaches to sustainable practices for parks and open space planning and design.

4.0 The Planning Context

Waterfront Toronto supports and promotes comprehensive and coordinated planning and design processes (i.e., integrated design processes). In this regard, it is expected that consultation will generally take place with the community, the City of Toronto and other agencies such as the Aquatic Habitat Toronto Working Group and the Ministry of the Environment.

This guide should be used within the context of other planning documentation that includes, but is not limited to:

Waterfront Toronto (www.waterfrontoronto.ca)

- Development Plan and Business Strategy
- Central Waterfront Public Space Framework
- Marine Use Strategy
- West Don Lands Precinct Plan
- West Don Lands Block Plan and Design Guidelines
- East Bay Front Precinct Plan
- Mandatory Green Building Requirements

Aquatic Habitat Toronto (www.aquatichabitat.ca)

- Toronto Waterfront Aquatic Habitat Restoration Strategy

City of Toronto (www.toronto.ca)

- Central Waterfront Secondary Plan - Making Waves: Principles for Building Toronto's Waterfront
- Our Common Grounds (Parks, Forestry and Recreation)
- Climate Change and Clean Air Action Plan
- Wet Weather Flow Management Policy, Master Plan and Guidelines
- Design Guidelines for Greening Surface Parking Lots
- Bird Friendly Development Guidelines
- Accessibility Design Guidelines
- Toronto Green Development Standard

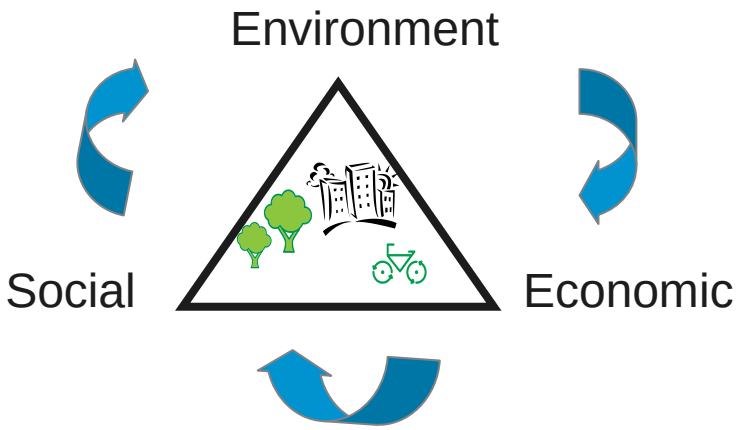
Within the next five years, the City of Toronto will witness a rebirth of its abandoned and neglected water's edge. The transformation begins with land acquisition, selective site demolition and large-scale soil remediation and environmental management. New construction and new projects will initiate a structured redefinition of multiple sites. Changes will include the creation of new ecologies and systems of connectivity; thereby fostering the evolution of social and economic transformation within the new communities.

Source: Redefining Toronto's Waterfront by James Roche
Topos "Transformation" 63/2008, p. 58 to 65

5.0 Definitions and Study Parameters

Sustainability:

Waterfront Toronto does not provide a single definition of sustainability, but it is broadly understood to include principles and actions that will result in overall environmental enhancement, economic benefit and social / cultural gain for the designated waterfront area, City of Toronto and the surrounding region.



Parks and Open Spaces:

Public outdoor spaces to be used for passive and/or active recreational purposes, including park infrastructure such as pathways, lighting, bike stands, and benches.

The focus for this guide is on public parks and open spaces, with some best practices related to park infrastructure such as paved plazas, washrooms, pavilions and information kiosks.

Best Practices:

Methods that are known today and considered to support the sustainability goals set out in Waterfront Toronto's *Sustainability Framework, 2005*.

Best practice choices are to be undertaken within an integrated planning and design process and within the context of balancing the three pillars of sustainability: environment, economic and social.

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Sustainability Best Practices for Parks and Open Space Design

6.0 SUSTAINABLE BEST PRACTICES

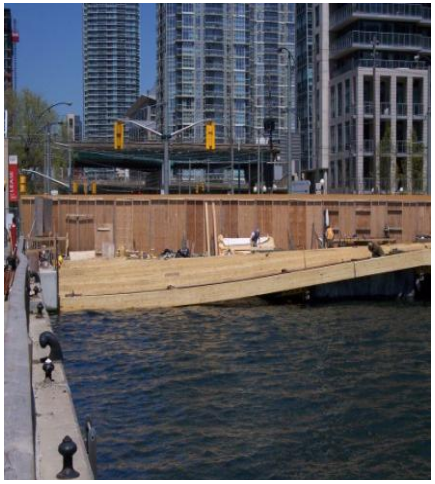
"Of particular importance to the Toronto Waterfront is easy access and excellent views of the lake. Increased access and visibility will contribute to the long-term viability of the area by inviting on-going interaction and engagement with the Waterfront."

Source: Toronto Waterfront Revitalization Corporation: Sustainability Framework, 2005

Overview

The sustainable best practices contained in Section 6.1 to 6.11 are grouped into 11 topics (primary category):

1. Access
2. Built Form
3. Community, Public Awareness and Safety and Security
4. Conceptual Planning, Management and Design
5. Energy Sources, Energy Generation, Energy Uses and Energy Conservation
6. Habitat
7. Materials
8. Recycling, Composting and Toxic Wastes
9. Soils
10. Stormwater Management, Water Conservation and Irrigation
11. Vegetation



Sub-categories are also assigned in order to describe the intent of the best practice. Included in each table are the sustainability themes established by Waterfront Toronto's *Sustainability Framework, 2005* and notes which theme(s) are addressed through the application of the best practice using a triangle "▲" for primary functions and a bullet point "•" for other benefits. Depending on the intent and approach taken, one or more sustainability themes can be addressed simultaneously.

For example, if "*use dual flush toilets*" is applied as one of the best practices for water, this practice primarily achieves the goal for reduced water consumption. Additional benefits apply to natural heritage (through reduced use of water resources), materials and waste (through the re-use of grey water) and innovation (through sustainable building design).

The assignment of relevant sustainability framework themes in the following charts is not exhaustive. The chart is intended as a reference to the various sustainability themes that each best practice may address and a starting point for discussing park design.

Best Management Practices that are of particular importance to Waterfront Toronto in achieving the basic foundation of sustainability are presented in **bold text** in the tables that follow. Although all Best Management Practices must be considered, those highlighted must be prioritized by park planners and designers.

The Planning and Design Sustainability Checklist is included in **Appendix A.** It is intended to ensure that sustainability themes are being integrated into all phases of project development. The park and open space charts in this guideline can assist project managers when filling out the checklist.

The Sustainable Product Checklist is included in **Appendix B.** It is intended to facilitate the evaluation of sustainable products that may be considered for Waterfront Toronto initiatives.

"Because of the role public space plays as a catalyst for urban development and in the quality of civic life, how these palliative spaces are treated is ultimately a reflection of our culture."

Source: Beyond Before and After, Groundswell, 2005 by Peter Reed

The Port Lands

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Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

6.1 Access

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Access	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Diversity	Develop strategies to attract people during different seasons.						▲	●				
Diversity	**Provide amenities for the different groups of people using the park.**						▲	●				
Marine	**Ensure ship corridors or channels do not traverse or that boat docks are not constructed over fragile marine environments.**		●						▲	●		
Marine	Marine facilities should be developed to allow natural beach sand movement to continue unimpeded.								▲	●		
Marine	Install permanent anchor buoys in harbour areas to mitigate anchor damage to bottom environments.								▲	●		
Pathways	**Build pedestrian paths at grade or use elevated walkways to protect environmentally sensitive areas and limit pedestrian access to fragile vegetation.**		●	●					▲			●
Pathways	**Position trees so that they are protected from damage by vehicles and/or from a natural division between cycling paths and pedestrians. (A*lso applicable to Topic 11: Vegetation*)**		●			●	●		▲			

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		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Access	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Persons with disabilities	**Consider the needs of all street users. Some persons with disabilities, particularly the visually impaired, have concerns about the safety of streets, where there is no a clear distinction between spaces for pedestrians and motorists.**		▲				●					
Persons with disabilities	Use universal designs to remove barriers to persons with physical and mental health disabilities (e.g., proper design of curb cuts and entrance ramps using gradual slope and non-slip surface; universal access to recreation/park spaces; universally designed and maintained amenities such as picnic tables, benches, drinking fountains, and play areas). (A*lso applicable to Topic 7: Materials*)		▲				●				●	●
Persons with disabilities	Landscape design and fences can be used effectively to help orient people who are visually impaired toward entrances. For example, bushes planted on either side of an entrance can make it easier to find. For safety reasons, avoid planting fruit bearing trees and thorny plants. *(Also applicable to Topic 11: Vegetation)*		▲				●		●			
Persons with disabilities	Signs should be well lit and mounted or hung in a prominent location, and at a height that all users can read comfortably. Signs should use universal symbols, tactile lettering, contrasting colours and fonts in a size and type that are easy to read. *(Also applicable to Topic 2: Built Form and Topic 7: Materials)*		●				●				▲	
Persons with disabilities; Pathways	To keep busy pedestrian areas free of obstacles, use amenity strips or rights-of-way with textural changes in the pavement to accommodate items such as advertising signs, planters, paper boxes and light standards. Accessible sidewalks, walkways and paths should contain appropriate surface treatment and slope, and street furniture and accessories should allow for free flow.		▲				●				●	●

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Access	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Roads	Use curvilinear road/access alignment to flow with the topography and add visual interest.		▲				●					
Roads	Use multi-purpose roads to provide access to visitors, maintenance, security, emergency vehicles and underground utilities to limit site degradation and re-landscaping from multiple roads used for single purposes.		▲	●			●					
Transit	**Provide for seamless integration with public transit.**	●	▲			●	●					
Transit	**Use transit as a catalyst for attracting visitors.**	●	▲			●	●					

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6.2 Built Form

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Built Form	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Symbolic	Define and maintain a sense of community (pavilions as focal point and symbolic representation of centre of community life). *(Also applicable to Topic 3: Community, Public Awareness and Safety and Security)*						▲	●				
Climate control placement	Locate structures to take maximum advantage of passive energy technologies to provide for human comfort (e.g., take advantage of cooling wind movements to provide natural air conditioning).	●			▲	●	●					
Durability	**Extend building life by using long life expectancy building materials.**	●			▲						●	
Energy efficient	**Minimize heating and cooling requirements by designing park buildings that are energy efficient.**	●			▲	●						●
Less material use	Pave less by reducing parking requirements and by developing narrower streets/pathways.		●	▲			●		●		●	
Multi-use	Develop facilities to integrate selected maintenance functions such as energy conservation, waste reduction, recycling and resource conservation into the visitor experience.	●			▲						●	

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Built Form	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Multi-use	Make vertical structures and roofs into habitat - use greenwalls, vegetated/eco/green roofs. *(Also applicable to Topic 6: Habitat)*				▲	●			●	●		●
Security	Enhance security by remote location of and controlled access to the park maintenance facilities and incorporate natural barriers into facility design to minimize need for security fencing or barriers.				▲		●		●		●	
Symbolic	Incorporate indigenous materials and crafts into structures.				●			▲			●	●

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Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

6.3 Community, Public Awareness, Safety, and Security

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Community, Public Awareness, Safety, and Security	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Culturally Applicable	Incorporate local customs, cultures into programs.						●	▲				
Engage	Engage the community in the design and planning process and throughout park lifespan.						▲	●				
Celebrate	**Celebrate community successes (i.e., landscaping project – reinforces visible sense of accomplishment).**						▲	●				
Communicate	**Maintain good communications and public information; invite the media to participate.**						▲					
Interaction	Provide opportunities for interaction with nature – e.g., small outdoor "rooms", wayfinding features (using varied materials for interest and orientation).						▲		●			
Activity	Provide spaces for physical activity for people of all ages and abilities – e.g., connectivity to local/regional walking and bike trails, parking for bicycles, sports fields.		●	●			▲					

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		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Community, Public Awareness, Safety, and Security	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Interaction	Provide spaces for social interaction (seating spaces, light food service, community "greens", and theme gardens).			●			▲					
Children	**Design spaces for children of various age groups (away from traffic and using a variety of play spaces / structures and wild undeveloped zones) along with areas and seating for adults to supervise.**			●			▲					
Children	Engage children in parks and open space design processes, where spaces are planned primarily for their use.			●			▲					●
Interpretive program	Educate site users with interpretive materials (e.g., about sustainability features, historical significance and values of native landscape restoration).						▲	●	●			
Interpretive program	**Provide site users with interpretive materials and facilitate wildlife viewing adjacent to habitat features (e.g., use bird boxes).** ***(Also applicable to Topic 6: Habitat)***						▲	●	●	●		
Visibility	Design for safety from crime and physical hazards (Crime Prevention Through Environmental Design principles).						▲					●
Controlled access	Enhance appropriate atmosphere and security by controlled access to the facilities. Incorporate natural barriers into the facility to minimize need for security fencing or barriers.				●		▲				●	
Lighting	Limit night lighting to level necessary for safety.	●					▲					

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6.4 Conceptual Planning, Management, and Design

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Conceptual Planning, Management, and Design	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Diversity	Create attractions and destinations throughout the park for a variety of users.			●			▲					
Organization	Establish a management group that is committed to implementing the vision.						▲					
Implementation	Garner support of political and other community leaders (to establish on-going updates for decision-makers and potential partnerships to facilitate the park design process).						▲					
Design	**Provide shade in sunny areas for human comfort and safety in activity areas (pathways, patios). Use natural vegetation, buildings, and slopes to shelter from sun and wind.** ***(Also applicable to Topic 11: Vegetation)***					●	▲		●			
Design	State a clear expression of purpose (specific identity and image).			▲			●					
Implementation	Ensure sufficient assets in land, staffing and equipment are secured to meet the system's goals.			▲			●					
Implementation	Make management of the park a central concern.			▲			●					

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		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Conceptual Planning, Management, and Design	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Design	**Balance the three critical components of sustainable development (ecological, social and economic viability and integrity).**			▲			●	●	●			
Design	Promote spiritual harmony with and embody an ethical responsibility to, the native landscape and its resources.			▲			●	●	●			
Organization	Work closely with the City of Toronto to establish special design/development standards and overlay districts where necessary (overlays for special sign ordinances, building height restrictions, and design elements).			▲	●							
Implementation	Connect / partner with outside independent group(s) that can broker for expanded resources (provision of on-going technical services, fundraising).			▲			●					
Implementation	Be proactive in managing tourism and development (e.g., enhance waterfront activities such the fishing industry with fish markets or seafood restaurants, bicycling and non-motorized boating).			▲			●					
Design	Plan landscape development according to the surrounding context rather than by overlaying familiar patterns and solutions.			▲				●	●			
Design	Before designing the space, understand the site, protect the streams/lakes/wetlands, and tap local knowledge of sites and seasons.			▲			●	●	●	●		
Design	**Understand the site as an integrated ecosystem with changes occurring over time in dynamic balance; development must be confined within these natural changes.**								▲	●		

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Conceptual Planning, Management, and Design	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Design	Allow the natural ecosystem to be self-maintaining to the greatest extent possible.								▲	●		
Design	Analyze and model water and nutrient cycles prior to development.								●	▲		

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6.5 Energy Sources, Uses, Generation, and Conservation

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Energy Sources, Uses, Generation, and Conservation	**SUSTAINABLE BEST PRACTICE**	**Energy**	**Transportation**	**Land Use**	**Sustainable Buildings**	**Air Quality**	**Human Communities**	**Cultural Resources**	**Natural Heritage**	**Water**	**Materials and Waste**	**Innovation**
Lighting	Use efficient lighting, timers, and motion sensors to save energy, minimize light pollution, deter crime and improve sense of safety and security.	▲				●	●					
Lighting	Light fixtures should remain close to the ground to avoid glare from eye level fixtures.	▲				●	●					
Lighting	**Use low voltage lighting with photovoltaic collectors for energy efficiency.**	▲				●						●
Alternatives	**Develop park buildings and structures that are energy efficient to minimize heating and cooling requirements. Examples:** ○ **Install solar efficient upgrades in meeting hall, yurts, picnic shelters** ○ **Consider solar power to generate hot water** ○ **Consider wind-generated power for lighthouses** ○ **Consider solar power and motion sensors to light floating landings** ○ **Consider geothermal energy** ○ **Consider biomass energy**	▲			●	●					●	●

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Energy Sources, Uses, Generation, and Conservation	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Passive	**Locate structures to take maximum advantage of passive energy technologies to provide for human comfort. Examples:** ○ **Orient structures and outdoor gathering spaces to take advantage of cooling wind movements to provide natural air conditioning.** ○ **Provide shade in sunny areas for human comfort and safety in activity areas (pathways, patios).** ○ **Use natural vegetation, slopes from shade structures to provide shelter from sun and wind.**	▲				●	●		●		●	●
Alternatives	**Use renewable energy sources where they are most effective (e.g., solar on roofs, wind energy on coast).**	▲				●					●	●
Plan early	Determine environmentally safe means of on-site energy production and storage in the early stages of site planning.	▲		●		●						
Wireless	**Use wireless or on-site power generation, or bury cables under or near other corridor areas that are already disturbed.**	▲		●		●						●

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6.6 Habitat

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Habitat	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Marine/aquatic	**Protect sensitive areas like beaches from disturbance.**						●		▲	●		
Marine/aquatic	**Ensure that development near aquatic environments includes an extensive understanding of sensitive resources and processes.**								●	▲		
Implementation	**Enhance tree environments (careful positioning, use of appropriate soil, generous sized tree pits to enable good root growth).**								▲			
Design	**Integrate low-water landscapes and sustainable irrigation (Xeriscape, water-efficient irrigation, drip irrigation, controls and sensors, subsurface delivery of water). *(Also applicable to Topic 10: Stormwater Management, Water Conservation, Irrigation)***	●							●	▲		●
Design	Ensure that turf is not located within 100 feet of riparian or wetland areas. Instead low maintenance vegetation should be encouraged to provide a natural buffer and edge habitat. *(Also applicable to Topic 10: Stormwater Management, Water Conservation, Irrigation)*								▲	●		

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Habitat	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Design	Leave native vegetation species in trenches/banks and allow for some organic debris.								▲			
Design	Restore channelized streams to natural channels with native plants and woody debris.								▲	●		
Native vegetation	**Restore regionally appropriate vegetation (remove invasive plants, use plants for wildlife restoration).** ***(Also applicable to Topic 11: Vegetation)***					●			▲	●		
Water features	Create shaded artificial ponds where beneficial to wildlife.								●	▲	●	
Wildlife viewing	Enhance visitor experience by encouraging wildlife to remain close to human activity centres through habitat maintenance.						▲		●	●		
Lighting	**Design lighting to minimize effects on migratory birds and amphibians.**	●							▲			●

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6.7 Materials

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Materials	**SUSTAINABLE BEST PRACTICE**	**Energy**	**Transportation**	**Land Use**	**Sustainable Buildings**	**Air Quality**	**Human Communities**	**Cultural Resources**	**Natural Heritage**	**Water**	**Materials and Waste**	**Innovation**
Design	**Reduce the urban heat island effect which contributes to ground level ozone and reduced air quality (e.g., vegetated roofs, pervious/porous paving, shade trees, and light/cool coloured paving/roofing materials).**	●		●		▲	●		●		●	
Renewable	**Use materials and products powered with renewable energy sources (wind, solar, geothermal, biomass).**	▲				●					●	●
Local	**Where feasible, use materials that are extracted, processed and manufactured locally (e.g., establish project goal for local materials).**	●				●					▲	
Equipment	Where appropriate, use landscape equipment with low operational energy (e.g., rakes instead of leaf blowers and hand saws instead of chain saws).	▲				●					●	
Recycled	Consider adaptive re-use of buildings and structures.	●		●	▲						●	●
Sustainably harvested	**Use sustainably harvested renewables including wood and substitutes for wood; rapid growth materials such as bamboo, jute, coir, willow.**					●			●		▲	

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Materials	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Durable	**Select materials that require reduced resource input to create or maintain (e.g., durability for less frequent maintenance, materials that serve multiple functions, salvaged/recycled materials).**	●					●		●		▲	●
Persons with disabilities	**Create obstacle-free pedestrian areas (e.g., use amenity strips or rights-of-way in the pavement to accommodate items such as advertising signs, planters, paper boxes and light standards. Rights-of-way could be highlighted by textural changes, changes in pavement material or paver stone orientation).** **Accessible sidewalks, walkways and paths should contain appropriate surface treatment and slope; street furniture and accessories should allow for free flow rather than becoming barriers.**		▲				●				●	
Washrooms	Use sustainable materials in washrooms such as recycled toilet paper.										▲	●
Recycled	**Use recycled materials in the construction of the road surfacing (e.g., crushed glass, shredded rubber tires or recycled aggregate).**		●								▲	●
Recycled	**Extract and reuse high value materials from demolitions (choose products that are more amenable to being reused).**										▲	●
Non-toxic	**Avoid toxic release inventory chemicals or toxic, non-renewable materials. For example:** ○ **Use citric acid based disinfectants** ○ **Buy cleaning products in bulk and reuse containers** ○ **Paint with low or no VOC** ○ **Use recycled paint** ○ **Avoid aerosols** ○ **Use non-toxic wood preservatives**					●				●	▲	

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Materials	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Non-toxic	Eliminate the need for herbicides by incorporating mow-strips under fence lines and around fixed site furniture.								●	▲	▲	
Pavement	**Use permeable paved surfaces to allow percolation of precipitation and reduce stormwater runoff. Paved surfaces provide better wear than unpaved surfaces.**									▲	▲	

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6.8 Recycling, Composting, and Toxic Wastes

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Recycling, Composting, and Toxic Wastes	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Recycling	**Implement comprehensive zero-waste recycling program**	●							●		▲	
Toxic wastes	Obtain specialist help/advice when dealing with toxic wastes.								●		▲	
Design	Provide space for processing all wastes created onsite (collection/recycling facilities, digesters, lagoons, etc.).								●	●	▲	
Composting	Integrate on-site composting. Add indigenous wildflower seed mixture to composted wood waste and to disturbed soils for sediment / erosion control and revegetation. *(Also applicable to Topic 9: Soils)*								●	●	▲	
Composting	Leave cuttings on lawn when frequently cut or bag and compost cuttings as a future top dressing.								●	●	▲	
Toxic wastes	Remove sediment and heavy metals from parking areas and trails through composting bioswale, vegetation strips and constructed wetlands.								●	●	▲	

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Recycling, Composting, and Toxic Wastes	SUSTAINABLE BEST PRACTICE	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Recycling	Re-use materials on-site such as rocks and other existing materials (aesthetic benefits, savings in transport, and opportunities for play).								●		▲	

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6.9 Soils

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Soils	**SUSTAINABLE BEST PRACTICE**	**Energy**	**Transportation**	**Land Use**	**Sustainable Buildings**	**Air Quality**	**Human Communities**	**Cultural Resources**	**Natural Heritage**	**Water**	**Materials and Waste**	**Innovation**
Composting	Incorporate compost and mulch recovered from landscape trimmings as a soil amendment.								●		▲	
Remediation / rehabilitation	Restore damaged soils on-site (avoid topsoiling, stockpile existing topsoil, amend soil, use green waste and other composts, use bio solids, watch for contaminants).								▲		●	
Conservation	Hold slopes with biotechnical erosion control (bind with living plants, use mats and mulches, monitor sites).								▲			
Conservation	Minimize soil disturbance. If disturbance must occur, a continuous cover over disturbed soils with erosion control netting should be maintained.								▲			
Soil and conservation	Protect soils to optimize water retention and support healthy plants. *(Also applicable to Topic 10: Stormwater Management, Water Conservation, Irrigation and Topic 11: Vegetation)*								▲	●		
Erosion protection	**Protect native soils and vegetation in high slope areas and elevate walkways and point footings for structures located at high slopes.**								▲			

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Soils	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Conservation	Identify areas of healthy soils and then protect them and/or limit disturbance to them.								▲			
Conservation	Avoid removing or disturbing vegetation (protects soils and reduces greenhouse gas emissions). Select plants to fit existing soil and drainage conditions.								▲			
Remediation and rehabilitation	**Improve health of degraded soils through soil restoration, reuse and rehabilitation to achieve conditions similar to regional reference soils.**								▲			
Conservation	Maintain healthy soils so that harmful or potentially harmful materials are not needed to support plant growth; where possible eliminate use of harmful materials.								▲		●	
Conservation	**Protect soils and vegetation to enhance absorption, retention and infiltration of precipitation.**								▲	●		

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6.10 Stormwater Management, Water Conservation, and Irrigation

Legend:

▲ = Best practice primarily achieves this WT Sustainability Theme goal.

● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Stormwater Management, Water Conservation, and Irrigation	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Stormwater Management and Design	Protect natural site drainage features (water courses, drainage swales, etc.) and associated natural soils and vegetation to convey and treat runoff.								▲	●		
Conservation	**Use low flow toilets, dual flush toilets, waterless urinals, composting or grey water toilets, low flow and timed metered faucets and shower heads in park facilities.**				●					▲	●	●
Stormwater Management and Design / Soil	**Regulate stormwater run-off to reduce soil erosion and to avoid directing water in unmanageable volumes. Avoid removal of natural vegetation, topsoil and natural channels that provide natural drainage control.**								●	▲		
Achieve water balance	Use vegetation to achieve target water balance conditions through interception (in vegetation above ground) and evapotranspiration (loss of water to the atmosphere).								●	▲		
Conservation	Mulch planting beds to minimize evaporation and maximize water retention. Protect soils to optimize water retention, minimize run-off and support healthy plants. Avoid removal of natural vegetation, topsoil and natural channels that provide natural drainage control.								●	▲		

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Stormwater Management, Water Conservation, and Irrigation	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Infrastructure	Audit/maintain water system integrity; use zero leakage, long-life expectancy water and wastewater systems design.				●					▲		
Irrigation	Use low volume irrigation systems – consider using ultraviolet-tolerant irrigation components laid on the surface of the soil and removed when native plants have become established.								●	▲		●
Irrigation	Reuse irrigation piping on other restoration areas or incorporate into future domestic hydraulic systems.									●	▲	●
Limit use of potable water	**Reduce/eliminate potable water use in the landscape. Use captured and treated rainwater for on-site non-potable water needs such as landscape irrigation, cleaning outdoor surfaces, water features and swimming pools.**									▲	●	●
Multiple Uses	Achieve multiple water uses simultaneously. For instance, design infiltration basins that are attractive and provide habitat for wildlife.								●	▲		●
Natural system	Work with the site's water regime (use natural drainage patterns, accept water supply limits, deal with stormwater where it falls).			●					●	▲		
Natural system	Inventory all streams and channels including those that are seasonal.								▲	●		
Natural system	Restore rivers and streams to full health. Where feasible, "daylight" streams that are confined to stormwater culverts/pipes to natural, above-ground position.								▲	●		
Natural system, conservation	Allow browning during low water years/seasons.	●								▲		

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Stormwater Management, Water Conservation, and Irrigation	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Restoration, water quality	**Maintain or enhance physical condition of on-site and off-site receiving water bodies (filter pollutants, maintain or enhance biological communities in receiving water bodies).**								●	▲		
Stormwater management	**Consider opportunities to treat rainwater on-site prior to discharge (using UV disinfection, biofiltration, constructed and natural wetlands, bio swales) to help clean out water pollutants before entering receiving water bodies.** **Collect and filter water from building roofs and use cisterns or rain barrels to store harvested rainwater or, if soil conditions allow, infiltrate into the ground.**								●	▲	●	●
Stormwater management	Raise stormwater inlets in planting areas to allow water to soak into the soil.								●	▲		
Stormwater management	Design grading and plan layout to capture and slow runoff.								●	▲		
Stormwater management	Treat rainwater runoff from all surfaces including parking lots, roofs and sidewalks – use landscape based water treatment methods such as dry wells, vegetated swales instead of curb and gutter systems, raised inlet rimes, vegetated filter strips and infiltration facilities.								●	▲		
Stormwater management	Reduce run-off from paved surfaces (make gutters and curbs permeable; infiltrate run-off with bioswales, use porous paving materials).									▲	●	

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Stormwater Management, Water Conservation, and Irrigation	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Water quality	Maintain trails with mulch or water bars to prevent erosion into streams.								●	▲	●	
Wetlands, natural systems	Protect and restore natural wetlands (benefits include filtering pollutants, wildlife habitat, and stormwater retention).								●	▲		

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6.11 Vegetation

Legend:

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● = Best practice also helps in achieving this WT Sustainability Theme goal

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Vegetation	**SUSTAINABLE BEST PRACTICE**	Energy	Transportation	Land Use	Sustainable Buildings	Air Quality	Human Communities	Cultural Resources	Natural Heritage	Water	Materials and Waste	Innovation
Plant species	Use plants that optimize carbon sequestration.					▲			●	●		
Plant species	**Incorporate native plants into landscaping.**					●			▲	●		
Soil	Design using drought-resistant “eco-turf” meadows.								▲	●	●	
Plant species	Construct for and with plants.								▲			
Plant species	Select vegetation and site design components that are adapted to the site’s geologic and climatic conditions (use native plants, use non-invasive plants).					●			▲	●		
Plant species	Conserve existing appropriate vegetation – determine reference landscape for the region and determine appropriate vegetation for the site; save existing trees.					●			▲	●		
Plant species	Repair and/or restore vegetation to maximize the ecosystem services provided by plants (e.g., avoid monocultures, place trees strategically to maximize canopy, cooling effects and windbreak potential).					●			▲	●		

		Applicability to Waterfront Toronto Sustainability Themes										
Sub-categories of Vegetation	**SUSTAINABLE BEST PRACTICE**	**Energy**	**Transportation**	**Land Use**	**Sustainable Buildings**	**Air Quality**	**Human Communities**	**Cultural Resources**	**Natural Heritage**	**Water**	**Materials and Waste**	**Innovation**
Plant species	**Design the site to minimize short- and long-term management resources and encourage natural ecological processes (e.g., use low maintenance vegetation to eliminate need for pruning). Circumvent mature tree trunk flares when installing paving (i.e., go around the tree).**	●					●		▲	●		
Maintenance	Ensure vegetation is produced, installed and maintained through sustainable practices (e.g., locally grown, buy from growers using sustainable practices).	●	●			●	●		▲			
Plant species	Use trees that are tolerant to exposure and pollution.								▲	●		
Plant species	Identify and protect sensitive native plant species.							●	▲			
Habitat	Restoration of native planting patterns should be used when site disturbances are unavoidable.							●	▲			

7.0 Best Practices Sources:

Waterfront Parks

Seattle Parks and Recreation – Greenwood Park
http://www.seattle.gov/parks/proparks/projects/GreenwoodPark.htm

Waitangi Park, Wellington, New Zealand
http://www.wellingtonwaterfront.co.nz/development/waitangi/waitangi_park_introduction/

Brooklyn Bridge Park, New York, 1999-2000 designed by Urban Strategies:
http://www.urbanstrategies.com/index.php/parks_and_open_space/parks/

Sherbourne Park Design, Toronto, Ontario, Canada

From 'Commission for Architecture and the Built Environment' (CABE, UK) Bidford Quay, Devon, England:
http://www.cabe.org.uk/default.aspx?contentitemid=1892&aspectid=23

Lake Ontario Park Master Plan – DRAFT April 2008

Other Urban Parks

Pioneer Courthouse Square, Portland, Oregon – one of the 6 best according to Project for Public Spaces
http://www.pps.org/info/newsletter/september2004/september2004_feature

Vancouver 2010 Olympics – sustainability practices for village/venues:
http://www.vancouver2010.com/en/Sustainability/EconomicBenefits/SustainableInnovationAndPractice

Regional/State Parks

Tumalo State Park, Oregon – Model sustainable park:
http://oregonstateparkstrust.org/OurWork/CentralOR/tumalosp (Need more info - interview?)

Washington State Lake Wenatchee State Park: http://www.ofm.wa.gov/sustainability/success/parks.asp

Parks Victoria, Australia http://www.parkweb.vic.gov.au/1process_content.cfm?section=124&page=18

Best Practices Documents/Resources

The Trust for Public Land (Excellent Parks), database of park links: http://www.tpl.org/tier2_pa.cfm?folder_id=3208

Thompson & Sorvig: “Sustainable Landscape construction: A Guide to Green Building Outdoors” received from D. Burgi, City of Toronto Jan 17/08

Sustainable Sites Initiative: Preliminary Report on Standards and Guidelines (Nov 2007).

Project for Public Spaces: 6 parks to learn from. . .
http://www.pps.org/info/newsletter/september2004/september2004_feature

Waterfronts Florida – sustainability best practice awards
http://www.sustainableflorida.org/documents/CSFWaterFrontsReport_000.pdf

Oregon Parks and Recreation Department – Framework for a Sustainable Future:
http://egov.oregon.gov/OPRD/documents/2014_sustainability_framework.pdf

Sustainable Practices and Opportunities Plan (US National Parks Service): Guiding Principles of Sustainable Design document at http://www.nps.gov/dsc/dsgncnstr/gpsd/toc.html)

Ontario Ministry of Municipal Affairs and Housing: Planning for Barrier-Free Municipalities from
http://www.mah.gov.on.ca/Page1290.aspx

Children Engagement in Park Design

Groupe Renaissance Group Community Association; Quick Facts (updated June 2008), provided by Chuck Charlebois; Telephone: (613) 938-9889; website: http://www.grouperenaissance.com

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Appendix A – Sustainability Checklist

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APPENDIX A
Planning and Design Sustainability Checklist for Project Management

Sustainability Checklist for Project Management
PLANNING and DESIGN (completion expected at 60% of Construction Documents Phase)

Sustainability objectives and targets should be integrated into all phases of project planning, design and implementation. The aim is to make the City of Toronto's waterfront both a national and global model for sustainability. Each project manager is to ensure that the sustainability work is carried out according to the terms and conditions set out in the Waterfront Toronto sustainability framework.

Managers have a particular responsibility to ensure that sustainability guidelines are adhered to in all decision-making processes. Please review Waterfront Toronto's Sustainability Framework commitments and determine relevance to project. Additional information is available on Waterfront Toronto's website.

Goal		Included (Actions taken)	Not Included (Why not?)
1.	**Sustainability teamwork** (e.g. team includes individual with a range of areas of expertise able to address economic, social, environmental and cultural dimensions & community involvement)		
2.	**Reduce reliance on automobile** (e.g. easy access to public transit, bikeways, water transport; facilities or bikes, environmental friendly cars & boats)		
3.	**Sustainable energy use and production** (e.g. energy efficiency; renewable and conservation technologies; link to district energy system; orient buildings to optimize access to natural lighting)		
4.	**A walkable city** (e.g. attractive and safe walking areas; basic amenities and green space within walking distance of residences)		
5.	**Neighbourhoods that sustain long-term residency** (e.g. variety of housing types & sizes; diversity of community features and services such as parks, schools, community centres, shops)		
6.	**Saving, restoring and/or developing natural areas and green spaces** (e.g. use of plant species native to Southern Ontario; preserving natural features; adding to City's tree canopy; stormwater management features; urban food production)		
7.	**Vibrant street life** (e.g. public art and design; distinctive and attractive public meeting areas; safe and well-lit access; mixed land use)		
8.	**Continual reinvestment and creative re-use over time** (e.g. adaptable building forms; evolution of green spaces)		

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Goal		Included (Actions taken)	Not Included (Why not?)
9.	**Water efficiency measures** (e.g. green roofs, low-maintenance plants and trees; water use metres)		
10.	**Conservation of cultural heritage and existing structures & buildings**		
11.	**Fish and animal habitat enhancement** (e.g. see Toronto and Region Terrestrial Natural Heritage System Strategy; see Toronto Waterfront Aquatic Habitat Restoration Strategy)		
12.	**Thriving community life** (e.g. community and recreational activities and economic opportunities that attract and are suitable for all ages and incomes and a variety of cultural backgrounds)		
13.	**Best practice soil and groundwater management**		
14.	**TWRC Green Building Guidelines Implementation** (e.g. energy efficiency measures; access to natural light and fresh air inside buildings and other requirements as presented in the Guidelines)		
15.	**Minimize noise and light pollution** (e.g. measures to ensure ambient noise levels no greater than 55dB (A) outdoors; 50 dB (A) indoors)		
16.	**Recycling and other environmentally friendly waste management activities** (e.g. zero transport of leaves and organic waste from Toronto waterfront area)		
17.	**Innovation** (e.g. strive for and document innovative responses to sustainability design challenges; identify innovative approaches for incorporating renewable energy – solar, wind, heat pumps and others – into existing and proposed building and public spaces)		
18.	**Community Involvement** (e.g. on-going community consultation and updates; work with community to identify features of cultural and ecological significance)		
19.	**Use of local materials and expertise** (e.g. choose sustainable products from businesses within a 100km radius of Toronto)		

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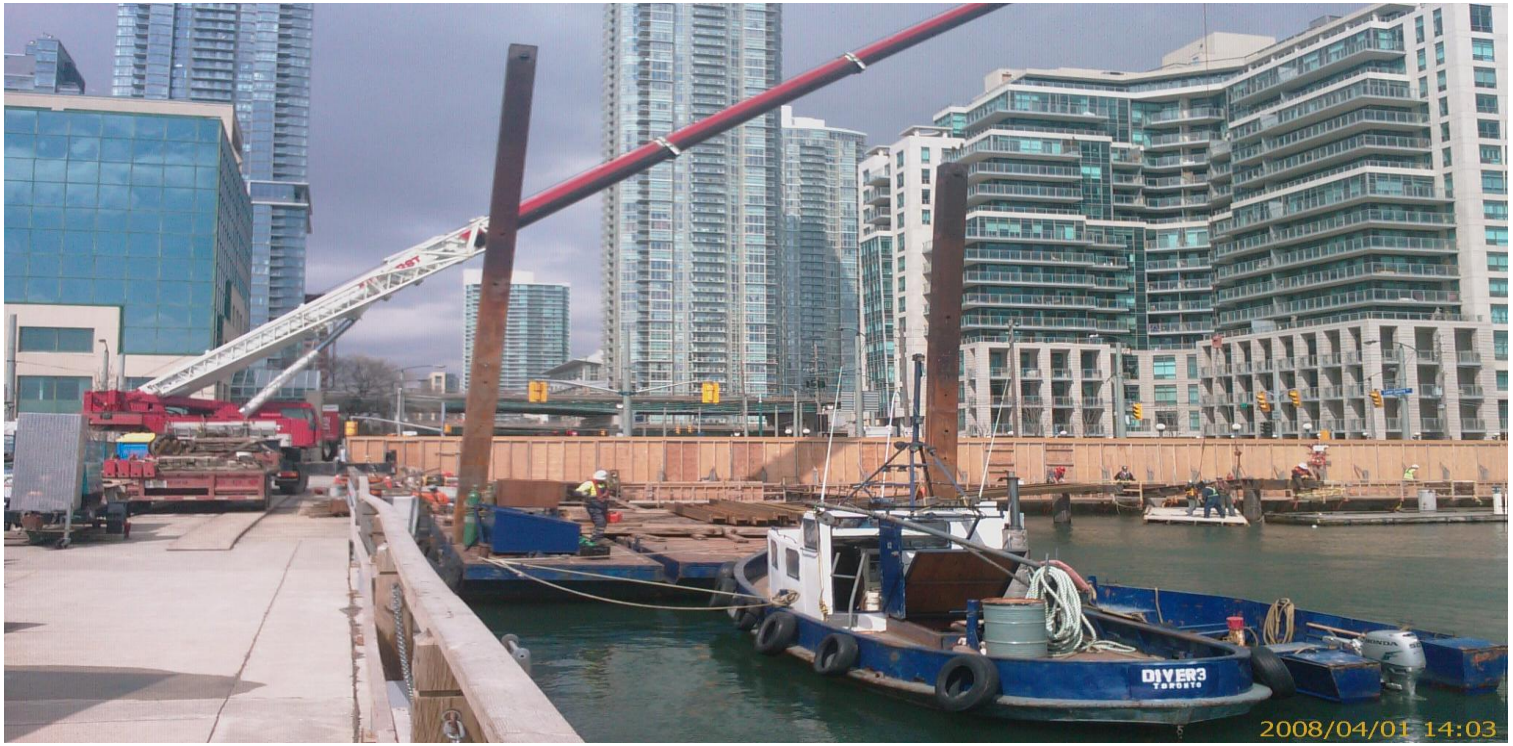
Appendix B – Sustainability Product Checklist



Waterfront Toronto's Sustainable Product Checklist (November, 2008)

This checklist is intended to facilitate the evaluation of sustainable products needed for Waterfront Toronto (WT) initiatives. By its nature, the phrase "sustainable products" can have wide meaning – from green-washed products to products subject to certification standards. Care must be taken to not only make well-informed choices but to undertake those choices within budget. In this context, when balancing project priorities and objectives against WT's **Sustainability Framework, 2005** and **Mandatory Green Building Requirements, 2007**, final decisions may reflect a degree of subjectivity. Nevertheless, it is important to assess and select products through questions that lead to informed decisions.

This checklist is not intended to be exhaustive. Rather, it raises practical questions about products under consideration and their impacts on people and the environment. This checklist should be completed for each product and returned to the responsible WT staff for consideration. For each product, a variety of options should be assessed for comparison.

Project Name: _____ **Date:** _____

HOW SUSTAINABLE IS YOUR PRODUCT?

Waterfront Toronto Corporate Principles **<u>Balance</u> key priorities and objectives**	Sustainable Development ☐ Urban Design Excellence ☐ Public Accessibility ☐	Economic Prosperity ☐ Fiscal Sustainability ☐ WT Operational Effectiveness ☐

PRODUCT:	**NOTES:**		
	Product Option A	**Product Option B**	**Product Option C**
PROXIMITY (Greenhouse Gas Impacts) **1.** Is the product local, regional, Canadian (out of province) or from overseas? **2.** What is the distance the product must travel? **3.** What is the mode of transportation (e.g., truck, sea, air, rail etc.)?			
COST **1.** What is the cost of the product? **2.** What are the shipping costs? **3.** Does the manufacturer provide product life-cycle cost analysis?			
MANUFACTURING PRACTICES **1.** Does the manufacturer have a written environmental policy in place? Is it available through a web site or through product literature? **2.** Does the manufacturing process release harmful substances? **3.** Does the manufacturer use renewable energy?			
PRODUCT CONTENT **1.** Is the product made of: ☐ rapidly renewable resources (i.e., replenished faster than the rate of consumption, such as sustainably harvested bamboo)? ☐ naturally-occurring (organic) materials? ☐ non-blended materials (i.e., alloys and mixes are expensive to separate and recycle)? ☐ post-consumer recycled / reclaimed materials? **2.** What is the percentage of the above? **3.** Where do the materials come from (i.e., from a rainforest vs. a tree plantation)?			
PRODUCT CHARACTERISTICS **1.** Are there alternative products containing lower-emitting materials / less toxic material content? **2.** Does the product release VOCs? At what rate? **3.** Does the product colour or texture lead to reduced lighting or facilitate the absorption of heat? **4.** Is the product recognized as energy efficient or sustainable (e.g., Energy Star, certified wood). **5.** Can the product withstand extreme weather (cold or heat)?			
LONG-LIFE DESIGN **1.** Compared to similar product types, what is the product's: ☐ life span (how long will it last?) ☐ durability (how well does it wear?)			
AESTHETIC QUALITY **1.** Would the product's appearance / design last through time / beyond trends? **2.** Does the product's appearance reflect project expectations or design intent?			
MAINTENANCE **1.** Is the product maintenance free? If not, what are its requirements? **2.** Can the product be maintained using cleaning products (safe for the environment and for humans)?			
PRODUCT DISPOSAL **1.** Is the product ☐ biodegradable? ☐ recyclable (all or parts)? ☐ reusable? ☐ repairable? ☐ reinstallable?			
OTHER CONSIDERATIONS **1.** Does the product meet recognized standard programs (e.g., Leadership for Energy and Environmental Design (LEED), Forest Stewardship Council (FSC), Energy Star)? **2.** Where replacement is anticipated, could the product be easily replaced by another similar-type product? **3.** Can the product contribute to increased public awareness related to environmental sustainability? **4.** Will the choice of product positively influence the public's perception of WT's sustainable communities goal?			