

Greening Waterfront Development

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Toronto is striving to make its waterfront both a national and global model for sustainability.



WATERFRONT TORONTO

TORONTO'S 6.2-MILE (10-KM) CENTRAL WATERFRONT, now largely underused or industrial land, is getting a \$15.9 billion (C\$17 billion) renewal over the next few years. Created by the federal, provincial, and Toronto governments in 2001 to lead the effort, Waterfront Toronto (WT)—officially, the Toronto Waterfront Revitalization Corporation—will carry out work supporting the following objectives held by all three levels of government:

- ▷ reduce urban sprawl;
- ▷ develop sustainable communities, particularly in the area of energy efficiency;
- ▷ redevelop brownfields and clean up contaminated land;
- ▷ build more affordable housing;
- ▷ increase economic competitiveness; and
- ▷ create more parks and public spaces.

But beyond what have become fairly commonplace objectives these days, Waterfront Toronto is committed to partnering with the Toronto and Region Conservation Authority, a public agency responsible for protecting and managing area natural resources in nine Great Lakes watersheds, to restore habitats for both aquatic and land species, as well as clean up the city's act in terms of the degradation of its waterfront body, Lake Ontario.

Toronto has a huge task ahead of it. Over the past 200 years, the pressures of colonization, port expansion, industrial use, transportation, and recreation have changed and degraded the waterfront to the point that in 1987, the International Joint Commission, an independent organization established in 1909 by the United States and Canada, included the Toronto waterfront on its list of 42 "areas of concern" around the Great Lakes.

"Much of the planning is now in place, and the government has committed \$1.4 billion (C\$1.5 billion) to public infrastructure," says John Campbell, chief executive of Waterfront Toronto. In the past two years, WT has been leading the revitalization with the development of parks and public spaces, six of which are now complete. Toronto's revitalization efforts are focused on three areas: West Don Lands, 80 acres (32 ha); East Bayfront, 55 acres (22 ha); and Port Lands, 1,000 acres (400 ha).

For West Don Lands and East Bayfront, WT issued an international call for urban designers to design master plans for what will be the first new waterfront districts.

Waterfront Toronto is planning to create a 20-acre (8-ha) park on the city's waterfront with streets radiating from it. Front Street will be a boulevard with a linear park and will be zoned for a variety of densities and uses.

The designers were selected, and the master plans—called precinct plans—have been completed. These two precincts connect the downtown to the lake and to the Don River corridor, and will provide gateways to future precincts and public open spaces in the Port Lands. A competition for the Lower Don Lands area of the Port Lands has recently been completed.

The city's vision for East Bayfront is that it will become a vibrant mixed-use precinct with relatively high density and a greater focus on employment, with 25 percent of the gross floor area, or 2 million square

feet (186,000 sq m) devoted to job-intensive office, retail, and entertainment space. Construction will soon be underway on a public realm, intended to make the area a significant public destination.

Don Lands site will include a 20-acre (8-ha) park, and strong transportation and design connections to the Don River, the waterfront, and Toronto's historic Old Town. The area, almost entirely owned by the provincial government, is within walking distance of downtown, adjacent to the Distillery District, and pedestrian, bike-path, transit, and road connections to the existing St. Lawrence and Corktown neighborhoods.

West Don Lands will be Canada's first neighborhood where all buildings will be required to meet the Leadership in Energy and Environmental Design (LEED) Gold-



To be developed first is West Don Lands, which, unlike other areas of the central waterfront, already has zoning in place to allow for residential and mixed-use development. The built-form principles contained in its precinct plan are generally consistent with the provisions of the existing zoning bylaw.

Plans for the new West Don Lands neighborhood, a former industrial site, grew out of work launched in 1997 by the West Don Lands Committee, a community coalition of resident, business, environmental, and heritage organizations. "The start of construction brings reality to our dream of knitting this derelict area back into the city," notes committee chair Cynthia Wilkey. The West

level standards, with an emphasis on energy efficiency as well as green roofs. Key elements of its plan include:

- ▷ 23 acres (9.3 ha) of parks and public space;
- ▷ public transit within a five-minute walk of all residences;
- ▷ pedestrian and cycling connections within the neighborhood and to the city;
- ▷ heating and cooling through a district energy system, which distributes thermal energy to multiple users by pipeline from a central plant, replacing self-contained building heating and cooling units;
- ▷ 5,800 residential units, including 1,200 units of affordable rental housing;
- ▷ 1 million square feet (93,000 sq m) of employment space;
- ▷ an elementary school;
- ▷ a recreation center with a swimming pool; and
- ▷ two child care centers.

The focus of Toronto's revitalization efforts is in three areas: West Don Lands, East Bayfront, and Port Lands. The West Don Lands will be redeveloped first; some planning and infrastructure work has already taken place in the other two areas.

The neighborhood also will encourage developers and builders to provide a car share program and use high-quality insulation in all buildings, and provide for bioretention of stormwater.

“We’re putting in the transit and parks first so that when people move in, they will be able to use them right away. If they establish a car-oriented pattern in the first couple of years, they tend to stick with it,” notes Campbell. Because WT is committed to creating streets that place pedestrians, transit, and cyclists ahead of the automobile, the roadways will not be unnecessarily wide, he says.

In partnership with the Ontario Realty Corporation and the Toronto and Region Conservation Authority, WT is working on building deconstruction, foundation removal, environmental remediation, flood protection, construction of a low-lying berm on the west side of the Don River, expansion of Canadian National Railway’s Kingston rail



bridge, realignment of Bayview Avenue, and extension of River Street. Construction of the Don Lands Park with its flood protection berm began in June.

The precinct plan, drawn up by a team led by Urban Design Associates of Pittsburgh, calls for the West Don Lands to become a vibrant mixed-use precinct on the edge of downtown Toronto. The precinct will be built out at a relatively high density, but will contain a range of scales and uses within it. Portions of the precinct, such as the buildings along Bayview Avenue, likely will be exclusively residential. Other areas, such as Front and Parliament streets, will mix office, retail, and residential uses.

The scale and texture of buildings will vary as well. Parts of the West Don Lands, such as along Mill Street, will contain eight-story buildings, while other areas, such as many of the north-south streets, will contain three- to four-story townhouses. The plan envisions “a range of loft-type residential and nonresidential buildings, compact townhouses forming intimate streets, a vibrant commercial node, an eclectic live/work area, and elegant apartments along a park drive and promenade.”

The 20-acre (8-ha) Don River Park will be the signature space of the new precinct and an important resource for several neighborhoods; pedestrian and bicycle paths will be incorporated throughout the park.



The West Don Lands area is slated to become a vibrant mixed-use precinct on the edge of downtown Toronto. Portions of the precinct, such as the buildings along Bayview Avenue, likely will be exclusively residential.

The sustainability framework goes beyond requiring a LEED Gold rating for sustainable buildings in suggesting that buildings be designed to incorporate atriums, winter gardens, rooftop gardens, terraces, greenhouses, and other elements that visually connect people with plants. It also calls for commercial building designs to enable all occupants with stationary desks to maintain visual contact with the outdoors.

In its community-oriented actions, Toronto encourages creation of gardens throughout waterfront communities and promotes organic farming and gardening. Designers of all new residential buildings are encouraged to incorporate roof gardens, balcony gardens, or community gardening plots.

In its nature-oriented actions, Toronto seeks to improve the ecological health of the shoreline, including reintroduction of top predators such as muskellunge and wall-eye, increased structural diversity across the waterfront, and protection and restoration of the habitat for all wildlife, including migratory birds.

Another strategy of the framework is to implement measures to help absorb rainwater, including use of green roofs, widespread green space, permeable surfaces, rain gardens, and, if necessary, surface gutters routing water to rain gardens. It also requires that developers adopt best practice guidelines for the control of herbicides, salt, animal waste, and other pollutants. Toronto wants developers to capture stormwater and graywater for reuse on site while reducing consumption through the use of dual-flush toilets and other water-conserving appliances. It targets per-capita consumption of potable water at 69 gallons (260 liters) per person per day for residential use and 21 gallons (80 liters) per person per day for commercial use.

WT maintains that the first step for anyone contemplating or involved in a revitalization strategy on the waterfront is to ask two questions: how does Waterfront Toronto's sustainability policy and requirements apply to my work, and how can this project support WT's sustainability vision and outcomes? All potential project managers for the central waterfront are given WT's "Sustainability Checklist for Project Management Planning and Design" to help guide their work.

Waterfront Toronto's sustainability framework—which embraces many of the city's green initiatives, including the Toronto Waterfront Aquatic Habitat Restoration Strategy and the Terrestrial Natural Heritage System Strategy—is conceived as the crucial document for achieving the goal of making the city's waterfront both a national and a global model for sustainability.

"Revitalization of the Toronto Waterfront will result in the tranquility, recreational activities, clean environment, aquatic and terrestrial habitat, and natural 'wildness' of a northern lakeside cottage," according to the vision laid out in the sustainability framework. While many of the strategies promote the return of wildlife to the waterfront, Toronto expects the framework to yield a great deal for its human residents as well, including year-round recreational and cultural opportunities, green space, access to the lake, clean beaches open for swimming, and fish populations suitable for eating.

The sustainability framework identifies concrete short-, medium-, and long-term actions intended to lead to remediated brownfields, reduced energy consumption, construction of environmentally friendly buildings, improved air and water quality, expanded public transit, and diverse, vibrant downtown communities, as well as the return of biodiversity.

“Sustainability objectives and targets should be integrated into all phases of project planning, design, and implementation,” the checklist reads. “The aim is to make the city of Toronto’s waterfront both a national and global model for sustainability.”

The checklist emphasizes that project managers have a particular responsibility to ensure that sustainability guidelines are followed in all decision-making processes.

Both the West Don Lands and East Bayfront plans follow sustainability principles in the following ways:

- ▷ redeveloping underused industrial lands within the city core with dense, mixed-use projects;
- ▷ reducing the need to develop agricultural and environmentally sensitive land outside the city;
- ▷ making public transit, cycling, and walking the primary modes of transportation;
- ▷ reducing air pollution associated with commuting;
- ▷ efficiently using existing infrastructure;
- ▷ increasing the supply of affordable housing;
- ▷ increasing the amount of parkland and community services;
- ▷ increasing economic development opportunities; and
- ▷ demonstrating the feasibility of green buildings.

However, the plans leave some gaps, say members of the public, as well as a team of experts Campbell brought to the city through an arrangement with the Swedish Trade Council to do a sustainability review of plans for the West Don Lands and East Bayfront precinct.

Public participants in the precinct plan charrette questioned whether the West Don Lands plan falls short of the sustainability framework’s natural heritage elements and Toronto’s declaration that “The Don River corridor will be improved as a natural open-space system with its terminus in a naturalized river mouth.” If the city wants the corridor to be a natural open-space system, why naturalize it only at the mouth of the river? Instead, the plans have left the Don River as a straightened channel—located between an existing rail line and an expressway—attempting to deal with its flooding with a berm rather than by restoring the river’s sinuosity. Could the 20-acre (8-ha) park be used to take the Don River out of its jail—extending the naturalization of the river beyond the short portion planned near its mouth to include the area upstream as well?

To its credit, when the same public charrette participants criticized the original concept for Don River Park as too manicured and formal where they would prefer it to

be more natural, WT responded with a further elaborated plan for the park designed by New York City–based Michael Van Valkenburgh Associates depicting a more natural landscape with trails through rolling wooded hills and an extensive native meadow.

If, as the West Don Lands precinct plan authors state, “the opportunity exists to *implement the city’s overriding objective of treating stormwater as a resource*” (emphasis added), that opportunity is not well depicted in the plan. It puts great emphasis on the built form and building envelopes with a nice level of well-illustrated detail. The block plan and design guidelines further illustrate the general principles of height and massing, the distribution of uses, and scale and character of the buildings facades defining the public rights-of-way. To be sure, these are all part of sustainable development, too. Yet the plan’s streetscapes are mostly lacking in imagery that could be interpreted as depicting the integration of stormwater concepts.

A better approach would have been to illustrate how strategies can be employed to reduce runoff in the streetscape with street-edge or median rain gardens, or perhaps to show bioswales in pocket parks. More green roofs also could have been part of the illustrations. Such imagery is important for educating the public and the development community alike. The plan states that designs must meet WT’s sustainability practices as well as the city’s environmental policies and Wet Weather Flow Management Precinct Plan, but does not depict how that can be done.

Nor does the plan deal boldly with some of the recognized barriers—the Richmond-Adelaide ramps from the Don Valley Parkway to the north, and the Gardiner Expressway and the rail yard to the south. While the authors of the Swedish sustainability review were largely complimentary, they believe that treatment of the rail yard/expressway area bordered by West Don Lands, East Bayfront, and Port Lands raises critical issues regarding the quality of the green areas.

The renaturalized river mouth is to connect a series of wetlands with trails along the development edge and may provide the opportunity for active recreation in Commissioners Park and within West Don Lands. However, the authors of the Swedish review see problems that may thwart that vision.

“The rail yard south of West Don Lands as well as the eight-lane-wide expressway is an extreme barrier between the city and the Port Lands area,” they write. “The major



The Don River corridor will be improved as a natural open-space system. With restoration plans for both aquatic and terrestrial species, people and wildlife are expected to coexist along some portions of the restored lakefront edge.

others that, because the rail will be used for public transportation, the rail yard is a positive element in their strategy rather than a negative one.

“Given our failure to deal with climate change and to meet our legally binding obligations under the Kyoto Protocol, a plan that calls for \$17 billion [Canadian] to be spent on state-of-the-art sustainable com-

road and rail barriers dramatically reduce the recreational value of the whole area and might also be a threat to many species that otherwise would find the wetlands an attractive environment. The barriers make it more difficult to develop attractive paths for bicycling and walking between West Don Lands and Commissioners Park as long tunnels or bridges are needed under or over the rail yards and the expressway.”

The Swedish review team believes these barriers will prevent the West Don Lands from being an integral part of the waterfront because it is isolated from both the Port Lands and the East Bayfront area. They believe the barriers also make it difficult to fully integrate the East Bayfront into Toronto.

Just last year, WT released a report that recommended demolition of the elevated Gardiner Expressway from Humber River to the Don Valley Parkway. “But the issue is so emotional that no one should be holding their breath for action,” columnist Christopher Hume wrote in “On the Waterfront: Toronto’s Reinvention” in the *Toronto Star* on January 26. “And despite the mayor’s brave talk about renewing the waterfront and completing the city, he has not shown much enthusiasm for tackling the Gardiner.” Campbell believes that will change this year or next.

Tackling of the rail yard seems to be further in the future. Now that the rail line is being converted from a freight line to a commuter line, it would seem to be an ideal time to move it. But the assertion by rail administrators that they need the yard in its present location for rail car storage seems to have convinced Campbell and

communities faces obvious resistance,” says a report by the Toronto City Summit Alliance, a civic leaders group, as adapted for the *Toronto Star* by Hume on February 21. “General indifference, even hostility, abound.” The report notes that this is starting to change, but many Toronto residents still take an “I’ll believe it when I see it” attitude.

Perhaps *Globe & Mail* journalist Margaret Wentz best summed up the skepticism on May 29 when, after a visit to Chicago, she wrote, “Of the [Chicago] waterfront I will say nothing, because the comparison with Toronto, where I live, is too depressing.” In his February 21 article, Hume mused, “Breaking through the outdated mindset of the city bureaucracy, political elite, and development industry will be enormously difficult.” How much of the original vision, he wondered, “will survive the onslaught of public agencies, cost-cutting councilors, and bottom-line builders?”

Despite its skeptics, Waterfront Toronto expresses confidence that it is now poised to attract partners from the private development community to help achieve its vision to become a model for the 21st century. “This represents an unprecedented opportunity for enlightened developers—nearly 2,000 acres [800 ha] in the heart of Canada’s largest city with opportunities for the next 25 to 30 years,” says Campbell. **U**

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