



## CHAPTER 6: WINTER WATERFRONT

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The greenway system proposed in the previous chapter offers opportunities for more people to enjoy the waterfront. Those who currently visit it in the colder months know how beautiful the shoreline is, year-round. However, most people assume that high-quality outdoor waterfront experiences in the Greater Toronto bioregion occur only during the summer months. Therefore, it is useful to examine the potential of the water-

front and river valleys to create different but equally memorable experiences in the colder months, from mid-September to mid-May. Harbourfront and the City of Toronto's eastern beaches offer examples of waterfront areas already well-used throughout the year.

In April 1990, the Board of Trade of Metropolitan Toronto suggested to the Royal Commission that a study be undertaken to "explore the possibilities of more wintertime recreational and entertainment activities along the central waterfront." As a result, the Commission organized a work group comprising representatives from local

and regional agencies, including the Board of Trade, to examine ways of enhancing outdoor use, and to prepare a report on the matter. The *Winter Waterfront* working paper was released by the Commission in December 1991 as a contribution to enhanc-

ing year-round waterfront use in Metropolitan Toronto.

The Greater Toronto waterfront is more than 175 kilometres (109 miles) long, encompassing

an impressive variety of places — from peaceful natural wilderness areas to towering residential condominiums adjacent to highways and commercial/tourist facilities. From Burlington Bay to the Trent River, there is a great deal of potential to improve year-round waterfront use, at low cost.

### ENHANCING WINTER WATERFRONT USE

Emerging development of a greenway system will increase year-round use of the Greater Toronto waterfront. Municipalities and conservation authorities would benefit

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from sharing pertinent information and participating in joint waterfront user studies. Municipalities could also contribute by adopting and implementing policies that achieve six major goals:

- providing year-round access;
- ameliorating outdoor climate;
- providing facilities to accommodate year-round activities;
- increasing year-round opportunities for contact with nature;
- enhancing user safety; and
- improving winter events and programming.

### PROVIDING YEAR-ROUND ACCESS

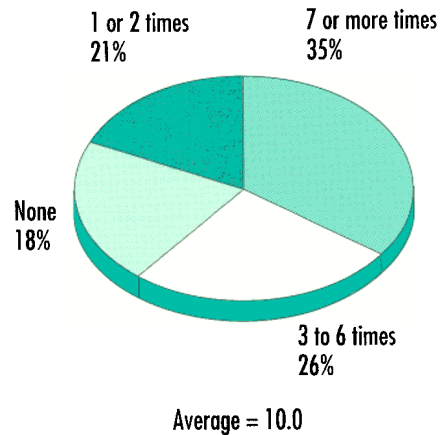
Accessibility to recreational areas is a key element in enhancing year-round use. The variety of walkways, ranging from the broad promenades at Toronto's Harbourfront to the modest paths and nature trails in Mississauga's Rattray Marsh or the Rouge River Valley in Scarborough, reflect the diversity of the bioregion's waterfront and river valleys; this should be retained, but connections between the various amenities should be made more comfortable.

The proposed greenway system would accommodate pedestrians and cyclists and would provide continuous access to waterfront promenades, parks, open spaces, and links to adjacent areas. The system should be safe and comfortable, connecting waterfront areas and the river valleys. The route of the waterfront greenway should be evaluated according to its ability to offer year-round use to pedestrians, cyclists, and others, including seniors and the physically challenged, and recognizing that some portions might be only seasonally accessible. Washrooms and

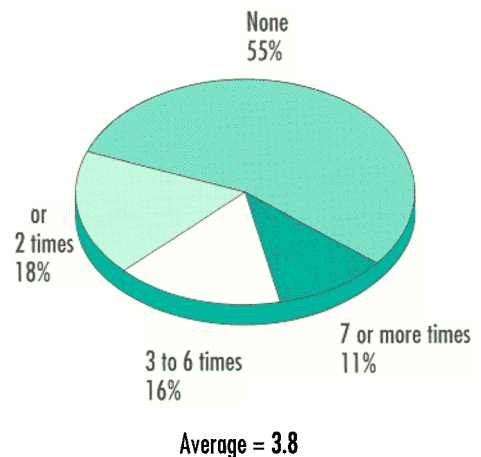
food concessions should also be provided at appropriate nodal points and should be open to the public, as much as possible throughout the year. Frequent year-round public transit service to the waterfront, with shelters designed to be comfortable in the colder months, would also encourage use.

## Waterfront Visits

### Summer Visits



### Winter Visits



The respondents visit the waterfront on average ten times in the summer and four times in the winter.

Source: Environics Poll, 1991.

Parking along the waterfront should be integrated into the surrounding environment; limited amounts should be carefully located along the waterfront, accommodating those who cannot walk long distances and enjoy visiting the waterfront, and those who enjoy viewing the lake from within a parked car.

## **AMELIORATING OUTDOOR CLIMATE**

The climate of the Greater Toronto bioregion waterfront area is affected by the Great Lakes, which tend to make average winter temperatures three celsius degrees warmer and summer temperatures about one and-a-half degrees cooler than in the hinterland. In winter months, the influence of the lakes causes constant freezing and thawing periods, often making weather unpredictable and the use of outdoor spaces sporadic.

The prevailing mean daily wind direction for the Toronto region shifts according to the season: in winter it is from the west about 50 per cent of the time. In spring, prevailing winds come from the west only four per cent of the time, and 42 per cent from the northeast. In summer, the prevailing winds are from the southwest 61 per cent of the time, while in autumn they come from the west/northwest almost half the time.

Some northern cities with colder climates provide year-round facilities, but the challenge in cities such as Toronto, where weather is less predictable, is to use the urban design process to ameliorate wind conditions and maximize access to the sun: year-round facilities requiring substantial financial investment are not always necessary.

There are two basic ways of reducing wind velocity in a specific site: by planting vegetation or building structures such as berms, walls, and screens. Berms, combined with trees and shrubs, provide effective year-round windscreening, the degree of effectiveness varying with the porosity of the plantings. For example, very dense evergreens achieve a strong reduction (about 80 per cent) in wind speed and force but such reductions can be sustained only for short distances (about the equivalent of five tree heights), because of the return flow of deflected air to the ground. Less dense planting reduces the sheltering effect but increases the range at which it is effective.

The relationship between microclimate and use of the outdoor environment during colder months has been studied in various places. For example, Scandinavian studies show that, on days when the temperature is as low as 10 celsius degrees but there is no wind, people will feel comfortable even without heavy clothing and will make use of outdoor open space.

A recent research study concluded that Toronto's microclimate could be moderated by providing shelter against the wind, thereby extending comfortable outdoor use by approximately 56 additional days a year — an extension of park use of almost 50 per cent over the existing 18-week base season. (See Figure 6.1.) Because ambient temperatures in March, April, and May are often below the human comfort level of 10 degrees celsius, but sunlight and the length of days are increasing, techniques that offer site-specific shelter from the wind and that capture the sun in strategic spaces could increase temperatures and encourage use of these areas.

Tall, bulky buildings can cast broad shadows for surprising distances, influencing the experiences of people who never go near them.

Hiss, T. 1990. *The experience of place*. New York: Alfred A. Knopf.

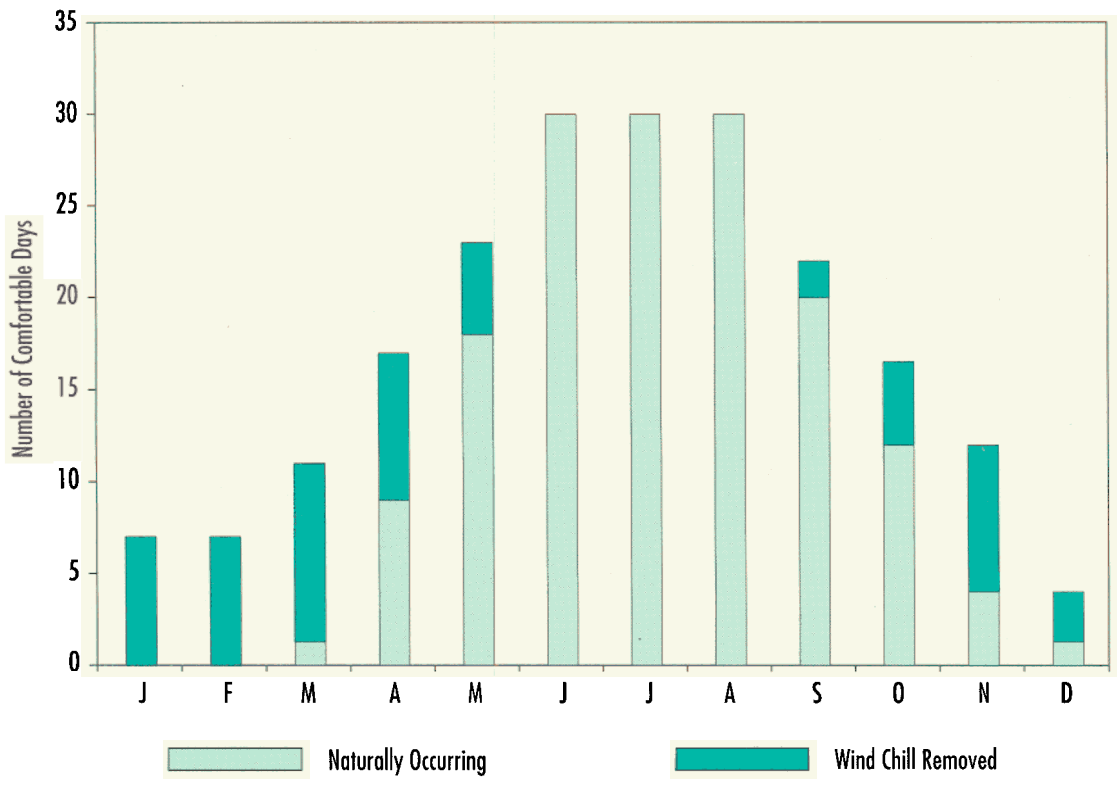
Temperatures in October and November are still in the outdoor comfort range but the effect of wet, windy weather on people needs to be addressed, if comfortable levels of outdoor use are to be achieved.

Studies examining the effects of built forms on sun and wind conditions and on pedestrians at street level have been done locally and in other parts of the world. San

Francisco recently developed and adopted solar access and wind comfort standards for modifying building forms, heights, densities, and setbacks to ensure that developments do not put open-space pedestrian environments in shadow and do not generate a wind tunnel effect.

In response to massive development that reduced usable open space in San Francisco's downtown and on its waterfront, voters approved referendum "Proposition K" in 1984; it requires that access to sun be protected in all public parks and open spaces under the jurisdiction of the Parks and Recreation Department, from one hour after sunrise to one hour before sunset throughout the year. Following the referendum,

**Figure 6.1** Increasing year-round use of parks by removing wind chill effects



Source: Klinger, X. 1991. *Winter waterfront: year-round use in Metropolitan Toronto*. Working papers of the Canadian Waterfront Resource Centre, no. 9. Toronto: Royal Commission on the Future of the Toronto Waterfront.

several related amendments about access to sun on sidewalks and other open spaces have also been adopted.

Guidelines for controlling windiness in public open spaces in Toronto's Central Area were developed in 1974 but have not been adopted as part of its Official Plan. Currently, developers are encouraged to assess a project's impact on the microclimate of surrounding areas but — because proposals are tested for wind effects only in the final stage of the planning approvals process — are seldom required to make changes.

A 1991 study undertaken for the City of Toronto as part of Cityplan '91 examined and analysed the effect of buildings on wind conditions at street level and the combined effect of sun and wind conditions on pedestrian comfort. It recommended establishing procedures and standards for preserving access to sunlight on Central Area sidewalks, parks, and open spaces, and confirmed that sun and wind conditions are critical to outdoor uses, particularly in spring and fall. The report also suggested further studies to establish performance standards that will protect pedestrians from possible high winds resulting from future development such as those proposed for the Railway Lands.

Microclimate improvements in built forms, such as courtyards and wind-screening buildings, have been demonstrated in several Scandinavian projects. Studies show that courtyard use may be extended by about six weeks, most notably in spring, by applying the 10 degrees celsius comfort criterion. This microclimate improvement was achieved by applying urban design guidelines for each residential block — building heights are gradually increased from two stories at the southern edge of the



*Modest sunpocket at High Park in Toronto*

courtyard to six storeys at the northern edge to screen out prevailing cold winds while allowing for maximum solar penetration.

Although appropriate authorities have a general understanding of the benefits of improving outdoor comfort levels, more appropriate policies, standards, and guidelines could be developed and implemented. For example, wind comfort and sun access standards would be helpful in developing all publicly accessible urban promenades, open spaces, and parks on the waterfront. Related guidelines could include the design of sitting areas and walkways located in areas protected from winter winds, sheltered to maintain views.

**When building heights are routinely increased . . . the shadow impacts are greatly increased. For those on the receiving end the change is not one of degree; it may be absolute. They had sun; now they have none . . . Sunlight should be a right, not an amenity that is nice to have.**

Whyte, W. H. 1988. *City: rediscovering the centre*. New York: Doubleday Anchor Books.