

*Many buildings that housed industry have been converted for office and retail use*

— maintaining the downtown as a place, not just for the very rich and the very poor, but for middle-class families.

## **POPULATION, EMPLOYMENT, AND TRAVEL PROJECTIONS**

Having considered the past and present regional context, the team examined the projections of the Central Area's share of population and employment projections to the year 2021, as well as forecasts of travel demand; on that basis it assumed a total regional population of 6 million people with a total employment of 3.4 million.

To evaluate the implications of the relationship between place of work and place of residence, including various degrees of compactness, five land-use scenarios were

developed, representing a range of future possibilities for the region. These were used as a basis for estimating travel demand to the year 2021.

In four scenarios, the 2021 population in Metropolitan Toronto was 2.8 million, and in the fifth 3.2 million, while in all five scenarios, Metro's 2021 job total was assumed to be 1.9 million.

The 2021 Central Area resident population in the scenarios ranges from 235,000 people to 405,000, compared with the 1986 level of 133,000 people. Future employment there ranges from 571,000 to 617,000 jobs by 2021, relative to the 1986 level of 429,000 jobs. The higher number of people, compared with the number of jobs, reflects policies of the City of Toronto and Metro and is consistent with the 1989-1990 provincial long-term forecasts for the Greater Toronto region.

The projections and scenarios were used throughout the study as a basis for considering the implications of growth for environmental conditions, place-making, and transportation requirements.

## **ENVIRONMENTAL CONDITIONS**

The environmental conditions of Toronto's Central Waterfront have always been dynamic, responding to changes in climate; forces of glaciation; the power of wind and waves; and, more recently, human activities.

For thousands of years, aboriginal people travelled the rivers — trading, fishing, and hunting. For them, "Toronto" meant a "meeting place" at a natural lakeside landing. Few in number, the Indians lived lightly on the land: they made trails in the forests, cut timber for shelter and firewood, hunted

and fished for food, and planted crops on small clearings above the valleys.

With the arrival of European settlers in the 18th century, the environment began to change dramatically. As described in Chapter 4, the waterfront was soon modified to provide piers for the boats and ships that were the primary means of transportation. Large quantities of stone were removed from nearshore waters for ballast and building. The land base was extended by lakefilling: almost all the land south of Front Street was once part of the lake; the vast Ashbridge's Bay marshes at the mouth of the Don River became a new port and industrial area. The ponds and creeks of High Park were severed from Lake Ontario, first by railway lines, and then by lakefill at Humber Bay, where a breakwater was built to protect the newly created beaches from wave action and to establish sheltered water for boating.

Humber and Toronto bays quickly became repositories for the wastes of the growing population: first for raw sewage and industrial effluents, later for waste that had undergone varying degrees of treatment. Today, stormwater and treated sewage from three treatment plants pollute the Humber

and Don rivers and the lake; this is still one of the most serious environmental problems in the Central Waterfront (see Chapter 3).

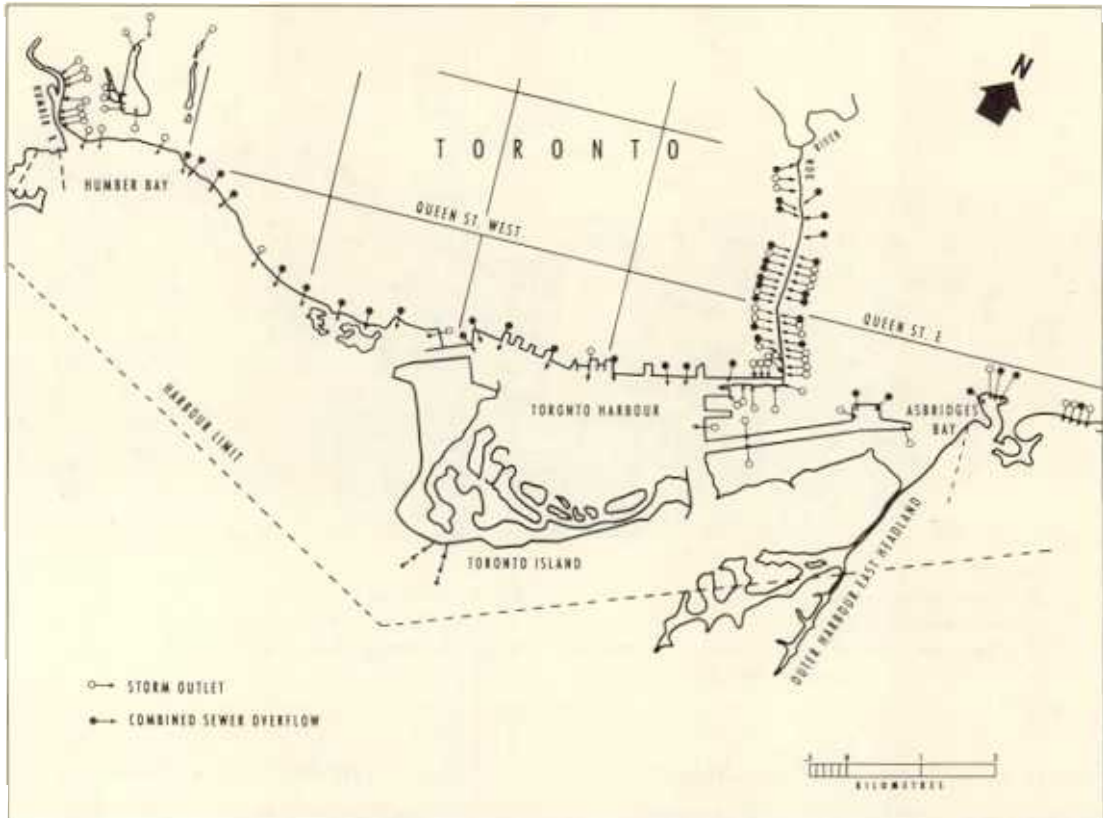
If Elizabeth Simcoe, wife of Upper Canada's first lieutenant governor and a diarist who faithfully recorded her impressions of Upper Canada, could visit the Central Waterfront today, she would find little to remind her of the wetlands, sand spits, clear rivers, creeks, and forests she enjoyed nearly two hundred years ago. In their place, she would find the manicured lawns of the Western Beaches, the asphalt of the CNE, the built landscape of Harbourfront, the lower Don in its concrete channel, the vacant lots and old industrial buildings of the Port District.

There are only small, fragmented patches of good-quality natural habitat remaining in the marshes of the lower Humber River, High Park, the Toronto Islands, and the Cherry Beach area. But perhaps Mrs. Simcoe would be pleasantly surprised to explore the Leslie Street Spit — a headland created by lakefill — where she would find many of the plants and animals that once lived all across the waterfront. A victim of malaria ("the shaking ague"),



*Painting of the Town of York, 1803*

## Map 10.4 Storm outlets and combined sewer overflows



she would certainly enjoy the decline in mosquitoes!

Typical of most towns and cities, Toronto tended to ignore the floodplains of its rivers as it grew along their fertile valleys. Hurricane Hazel, which swept through this area in 1954, wreaked havoc across the city, destroying lives and property, especially in the Humber watershed. In the aftermath, authorities moved to keep many river valleys free of development, to avoid future tragedies. However, some older areas of the City, particularly in the Central Waterfront, still sit in the floodplain of the Don River.

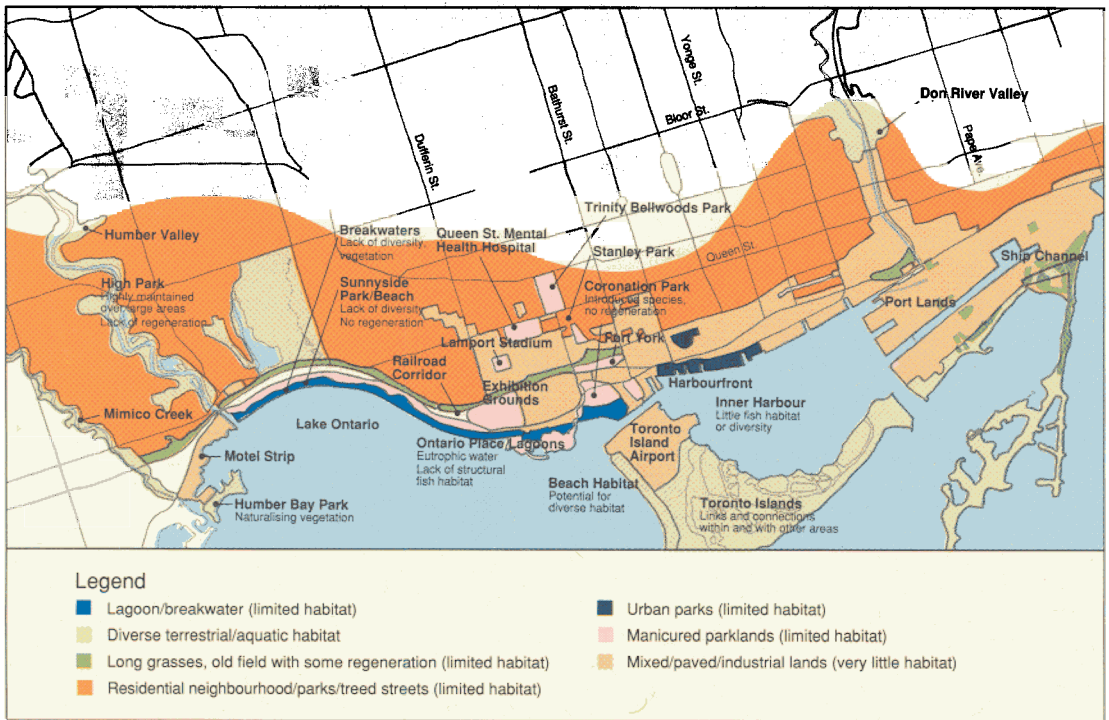
The microclimate of the Central Waterfront is affected by both the city and by the lake. All cities affect their climatic conditions: vehicles and the heating/cooling

systems of buildings create excess heat; built form creates shade and changes wind patterns and speeds; and pollution in the air reduces the intensity of solar radiation. Combined with these factors, the Central Waterfront is influenced by weather patterns associated with the lake: wind, fog, and the moderating effects of the water on temperatures.

Air quality in the Central Waterfront generally meets health-related guidelines, except that there are often high levels of ground-level ozone during spring and summer; there are high levels of nitrogen dioxides, carbon monoxide, volatile organic compounds, and dust near the transportation corridor.

In the past decade, pollution from all sources except vehicle emissions has been

## Map 10.5 Habitats



reduced in the City of Toronto. Although advances in technology could be expected to reduce automobile emissions in the future, the *Toronto Central Waterfront Transportation Corridor Study* concluded that benefits in terms of overall air quality may be minimal:

... over the next 30 years, technological developments may make possible substantial reductions in energy consumption and/or vehicular emission per vehicle-kilometre, but absolute reductions in energy consumption and the impact on the environment would require greatly improved transit and changes to land use/urban structure. These will be needed in order to reduce average trip lengths, encourage transit use, and motivate behavioural change to divert discretionary travel from cars to transit, cycling, and walking. Stabilization or

reduction of vehicle-kilometres of auto travel will be required if we are to achieve the significant reductions in automobile energy consumption and emissions made possible by technological developments.

Air pollutants from industrial activities also cause concern locally; in the Port Industrial Area, for example, high levels of dust and odour create unpleasant conditions and sometimes affect nearby residential neighbourhoods (such as parts of South Riverdale).

Transportation is also the greatest source of noise in the Central Waterfront: traffic on the Gardiner/Lakeshore, trains and shunting yards, aircraft at the Toronto Island Airport — all are major contributors. Residential communities on the Toronto Islands and at Harbourfront have been particularly affected by aircraft noise. Buildings in the St. Lawrence neighbourhood were designed without open windows and

balconies facing the Gardiner/Lakeshore/railway corridor.

The Ataritari and East Bayfront/Port Industrial areas are also subjected to high noise levels from the transportation corridors, which may restrict the form and design of any residential buildings there.

Lakefilling and former industrial activities have left a legacy of contaminated soils and groundwater in much of the Central Waterfront, particularly Ataritari, the Railway Lands, and the East Bayfront/Port Industrial Area. In many places, toxic metals, oil and grease, and complex organic chemicals are found at levels that may have harmful effects on people, other animals or plants.

The costs of cleaning up — which must be done if these lands are to be kept in productive use — are uncertain because of a lack of knowledge on several fronts: the full nature and extent of the problem; standards to which the soil must be cleaned; and the best methods of treatment. There are many methods, of varying cost and effectiveness, so that not even experts can say with certainty what should be done and how much it will cost.

The uncertainties and the possible liabilities have caused almost all parties — owners, investors, lenders, and governments — to hesitate. For its part, the banking industry has identified the problem as the biggest single domestic issue facing Canadian banks in the 1990s. To avoid potential liability, which could exceed the value of assets, banks are simply refusing to extend credit to business facilities that show signs of pollution. However, the problem cannot be ignored; nor should we allow it to bring clean-up to a grinding halt.

The built environment of the Central Waterfront is a mixture of old and new,

from the historic Gooderham and Worts distillery to the high-rise condominiums of Harbourfront. Although much of the heritage on this part of the waterfront has already been lost to redevelopment, enough remains to retain a sense of history — if changes are approached thoughtfully.

Although every one of the Commission's studies in the Central Waterfront focused on environmental conditions, the environment of the East Bayfront/Port Industrial Area was studied in greatest depth. The environmental audit of that area is relevant to the rest of the Central Waterfront in two respects: first, many of the audit's findings and recommendations are appropriate to other places along the waterfront. Second, the audit process is applicable to future studies elsewhere. (A description of the audit results is included in the Lower Don Lands section of this chapter.)

Having reviewed past, present, and possible future environmental conditions (air, water, soil quality, and other factors) along the Central Waterfront, the *Toronto Central Waterfront Transportation Corridor Study* concluded that:

Urbanization processes in the Central Waterfront have degraded both terrestrial and aquatic habitats resulting in a poor environment for wildlife and for human activity. The ongoing transition of the Central Waterfront from largely industrial and related transportation uses to a more diverse and urban place — and the fact that hundreds of hectares are currently vacant or underutilized and waiting for the second half of the transition to occur — provides this generation of Torontonians with a unique opportunity to improve the area's natural and physical environment

— first in terms of creating a “green infrastructure” of open spaces, parks, and links and then in terms of other aspects of environmental quality.

The study sees green infrastructure as an essential element of urban infrastructure, as important as — some would say more important than — streets and utilities. “Green” is shorthand for natural and pedestrian spaces of many kinds, from plazas and streets to public gardens and urban wilderness. The arrangement and proportion of paving, structures, and plantings vary, but green infrastructure has certain common characteristics: it provides a useable, diverse, open, accessible, connected, safe, and attractive environment for people outdoors, whether they are walking, running, playing, sitting, lounging or using wheelchairs, bicycles, or roller skates.

The reviews of environmental conditions undertaken for the Transportation Corridor Study and the Environmental Audit of the East Bayfront/Port Industrial Area provided an understanding of the requirements for green infrastructure and environmental regeneration in this area. For example, it became apparent that plans and programs in the Central Waterfront should:

- take into account current and future pollution levels and noise from all sources;
- include measures to improve the quality of water, soils, and air;
- ensure that studies are conducted to assess levels of toxic contaminants in air; assess air quality in the vicinity of the Gardiner/Lakeshore Corridor; undertake further air modelling in the area; and assess noise levels in the area;

- ensure that there is an adequate buffer between industry and utilities, including the Main Sewage Treatment Plant, and any sensitive uses in the area;
- include consultation with emergency response departments on access, hazardous material use and storage, and availability of hospital and other emergency services;
- increase the diversity and connectedness of parks and other open spaces;
- ensure that future recreation in, and access to, open spaces in the area strikes a balance between the needs of people and those of wildlife;
- increase the diversity and quality of terrestrial and aquatic habitats;
- maintain and enhance the diversity and distinctiveness of places in the Central Waterfront, and, through integration and reuse, keep as much as possible of the area’s industrial and natural heritage; and
- protect and enhance vistas.



## **PLACE AND CORRIDOR**

The central theme of the *Toronto Central Waterfront Transportation Corridor Study* is the balance between place and corridor within this regional and environmental framework.

As used in the study, “place” is shorthand for a habitable place, a memorable place, one that can be occupied comfortably by people on foot or seated, to linger and appreciate, a place which can and should be clean, green, useable, diverse, connected, and beautiful. In short, a pleasant and accessible place. It is a suitable and desirable

place in which to work, live, and play — a place that can be developed economically.

The term “corridor” is used as shorthand for a passageway for high-speed and efficient movement, the primary purpose of which is the easy flow of powered vehicles and where people on foot or bicycle or in a wheelchair are unwelcome and unsafe. The corridor may contain different modes of transport: rail, road, transit, etc. If the transport is by automobile, the corridor usually connotes an expressway, highways, regional or arterial roads — through routes, as opposed to main, local or neighbourhood streets that rank lower in the road hierarchy.

Many main or neighbourhood streets in Toronto accommodate movement and, in a sense quite different from that meant in the study, can be described as corridors.

But a street’s place-making — its social-attributes are dominant.

If done well, the social or place-making element gives main and

neighbourhood streets a civilized quality.

However, there is a limit to their capacity to perform this function if they are made to carry too much traffic.

Protecting Toronto’s neighbourhoods from corridor traffic has channelled vehicles to fewer and fewer free-flowing corridors, and these, having surpassed their social carrying capacity as places, have now reached their transportation carrying capacity as corridors. The primary vehicular conduit serving the downtown is the Gardiner/Lakeshore couplet.

To varying degrees, it compromises the habitability of all the places it goes through, but it does so most severely between the downtown and Toronto Bay.

The balance of place-making and corridor-making design criteria will have to shift in favour of the former if this central piece of the waterfront is to become truly habitable, an integral part of the downtown.

## PLACE-MAKING

For the past several decades our regional community has been playing out two urban development themes. The first has been continued urban sprawl, designed around the auto as the dominating factor, augmented by single-use zoning, which was originally intended to separate unhealthy industrial workplaces from residential areas. It is characterized by free-standing houses, separated workplaces, and shopping centres linked by vast networks of roads.

This form has been immensely popular,

space-consuming,

and, it is now appar-

ent, very expensive in

land, money, environ-

mental health, and

travelling time.

The second theme is becoming increasingly evident here, as in other parts of the world: it features closer integration of workplaces and living places, more compact mixed-use zoning interspersed with larger green spaces, a greater role for transit, and less reliance on cars. This composite model for development has begun to take hold in Toronto’s Central Area, and is showing signs of acceptance elsewhere. All the Commission’s studies, including the *Central Waterfront Transportation Corridor Study*, reinforced the need for a greater emphasis on the second model.

A significant portion of the study dealt with the ingredients of place-making, the changes and planning approaches necessary for a more habitable central waterfront. It

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*The central theme of the study is  
the balance between place and corridor.*

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We are molded, we say, by the conditions and the surroundings in which we live; but too often we forget that environment is largely what we make it.

Bliss, C. 1904. *The kinship of nature*. Toronto: Copp Clark.

pointed out that there is a unique opportunity to make the waterfront memorable, as the result of the regional shift in heavy industrial and related transportation uses from the city core to the periphery. Making the waterfront a better place will not only be of benefit locally, but will help the city and region as a whole. This offers a chance to create an extensive green infrastructure, a better quality of urban development, and economic growth in the City's Central Area, which is otherwise constrained for space.

The study showed that a quantity of new housing is particularly important; it will reduce pressures for more long-distance commuting; create a livelier, more diverse, and safer place day and night throughout the week; and reduce the tendency to destroy outlying countryside.

The presence of people who live on or close to the waterfront in well-designed communities is the best way to ensure the vitality of the Central Waterfront, assure public security and safety, and encourage the fullest use of waterfront amenities.

The study envisages a range of neighbourhoods (and supporting community facilities), with a wide mix of different housing types and tenures, and a population that is socio-economically reflective of the region: all income groups, all ages, all family types, including childless couples, singles, and people who are able-bodied as well as those who are handicapped.

Given the Central Area's dominance as the region's workplace, with its current surplus of office capacity, more emphasis on housing and community development will help to redress the balance and integrate workplace and living place there.

In order to understand the full scope as well as the impediments to place-making there, and to explore the regional effects, the team studied each of the places along the Central Waterfront. They also analysed the emerging land-use trends, including land prices and related economic considerations.

It became clear that there is sufficient land capacity — some 300 hectares (750 acres) — to accommodate most or all of the expected increase in the Central Area population, projected at between 100,000 and 270,000 people. Furthermore, it is also obvious that jobs, housing, and related community facilities on the waterfront could co-exist in mixed-use developments.

The analysis showed that at normal Central Area densities and at the rate projected in Cityplan '91 (3,500 housing units per annum), one year's production of housing would consume about 16 hectares (40 acres) of Central Waterfront land (rather than the 280 hectares (700 acres) that suburban densities would consume).

It also showed that increasing the ratio of population to employment in the Central Area, and creating a more compact urban structure in the Greater Toronto region, would reduce increased demand for travel into the centre, by as much as 50 per cent.

But the analysis showed that if place-making in the Central Waterfront is to be done well, the barrier and environmental effects of the Gardiner/Lakeshore and the rail corridor would have to be eliminated or substantially reduced; the green

infrastructure would have to be installed; and the City's normal "neighbourhood-friendly" street grid would have to be extended wherever possible south of Front Street to the water, where it does not now exist.

This more interconnected, multi-use, civilized street network would have to be developed as the armature around which housing, mixed-use development, and a green infrastructure could be created.

### THE CARRYING CAPACITY OF CITY STREETS

As development in the region around Toronto spreads, it becomes increasingly obvious that the Central Area road network is limited: untold acres of land in outer municipalities have been dedicated to road networks that, increasingly each year, feed traffic that winds up on the Central Area's fixed amount of roadway. Moves to

make this central road network operate more efficiently lead inevitably to road designs that only increase traffic flow, and that do so at

the expense of the pedestrian environment and the sense of the street as a habitable public place.

A neighbourhood street can be wonderful: the public

domain that serves as a means of address to the houses along it, a space in which neighbours meet and children play, where trees grow, and from which services of all kinds are supplied. A main street can be equally enjoyable: diverse and active, organizing elements that serve the local community, it offers shopping, commerce, entertainment, and the company of others.

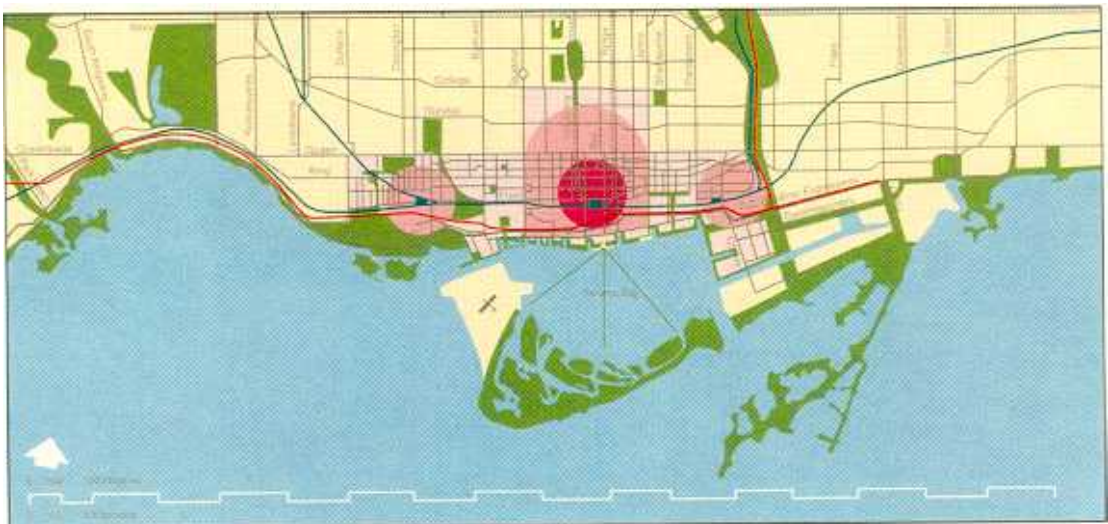
Such main streets frame public space. While they permit traffic movement, they have a finite carrying capacity which, if exceeded, changes them from being attractive to becoming dreary stretches that serve

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*It is also obvious that jobs, housing, and related community facilities on the waterfront could co-exist in mixed-use developments.*

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**Map 10.6 Emerging urban intensities in the Central Waterfront**



only vehicles going to and from somewhere else. In the shorthand of the *Central Waterfront Transportation Corridor Study*, they become corridors dedicated to or dominated by traffic, rather than public places.

The turning point or threshold at which place-making dominates corridor-making can be called the social, as opposed to transportation, carrying capacity of the street. While not usually expressed that way, the fact that liveable streets have a carrying capacity is well-known to residents of Toronto's neighbourhoods. They have successfully insisted that traffic flow remain below this threshold — a major reason that Toronto's neighbourhoods work so well.

The team suggested that the street system in the Central Waterfront be designed to meet standards that limit — and, if necessary, reduce — the quantity of commuter traffic to fit a street's social carrying capacity;

necessary transportation capacity would be made up by improved public transit service.

## **THE CENTRAL WATERFRONT AS A CORRIDOR**

The Central Waterfront is also a strategic corridor for moving people and goods to, from, and through the Central Area. Road, rail, marine, and air transportation facilities are all part of the Central Waterfront's role as corridor.

The major rail facility is the Lakeshore Corridor, which stretches across the Central Waterfront, and is joined by lines from the Don River corridor in the east and the north-west corridor in the west. GO Transit provides rail commuter services on seven radial lines that converge along these corridors to arrive at Union Station, while VIA provides rail service to other cities and provinces.



*A friendly street, Markham Street, Toronto*