groups. Periodic meetings allowed members from different disciplines to interact and share information. Linking up these work groups were two "integrators", to ensure that work group members from each discipline recognized how its findings related to the concerns of others. For example, the integrators might ask members of the air group how air quality is affected by soil, industry, and transportation, or how it affects soil, water, wildlife or humans. The integrators later synthesized and interpreted all the information collected by the various disciplines, and the results were published in two reports, *Environment in Transition* (1990), which covered Phase I of the audit, and the audit's final report, *Pathways* (1991).

Challenges and Opportunities in the Lower Don Lands

Many of the characteristics connecting different parts of the Lower Don Lands to each other can be considered both challenges and opportunities. The areas:

- share an interesting history;
- are generally underused;
- lie predominantly in the floodplain of the Don;
- have similar environmental problems;
- have poor links to the rest of the City; and
- for the most part, are owned publicly.

Over the last two centuries, human activities have dramatically shaped the physical environment of the Lower Don Lands. Where one now finds recycling plants or cranes, there was once a fertile marsh at the mouth of the Don River. Two hundred years ago natives fished with spears by lantern light in the Ashbridge's Marsh. European settlers caught fish, muskrats and turtles there, and market gunners shot fowl for the citizens of York. Simple frame cottages hugged the Lake Ontario shore.

The industrialization of the Lower Don Lands began in 1831, when James Worts came from England and established a grist mill at the eastern end of the harbour; the following year, Worts's brother-in-law William Gooderham arrived in York. The two went into business together and, in 1837, converted their flour mill to a distillery. As Gooderham and Worts, it operated until 1990, and left behind a cluster of industrial buildings of great historical and architectural value — one of the most important historic sites in Toronto.

By the 1880s, Ashbridge's Marsh was polluted from untreated human, animal, and industrial wastes, and its condition was becoming a civic concern. In response to the problems in the marsh and ongoing navigational problems in the harbour, the newly formed Toronto Harbour Commissioners (THC) drew up a plan to reclaim the northeast corner of the harbour and the marsh. The plan, unveiled in 1912, featured state-of-the-art docks, broad tree-lined avenues, and modern factories linked to the outside world by ship, rail, and road. The Port Industrial Area was to be Toronto's industrial centre, on land created from sand dredged from the bottom of the lake by the *Cyclone*, a massive dredge in what was considered one of the great engineering feats of its time.

The meandering Lower Don River was straightened and confined to a concrete channel, with a new mouth, an abrupt right-angle turn into the Keating Channel and

ASHBRIDGE'S BAY

Ashbridge's Bay, once one of North America's most important wetlands, was named after a family who came from Pennsylvania to the Town of York in 1793 and settled on the east bank of the Don River near the outflow into the bay. Today all that remains of the once-vibrant marshlands are the memories set down by hunters and naturalists who used the 520-hectare (1,285-acre) marsh.

When the Ashbridge family received its grant of land, the bay was a patchwork of large and small ponds with weedy lagoons, bogs and islands of bulrushes, water-lilies, arrowhead, marsh marigolds, cane grass, and duck weed. The Don River meandered through the delta marsh it had helped create. Shallow warm water, nutrients from the Don, and lush vegetation created ideal habitat for hundreds of species of wildlife. Early settlers "saw ducks so thick that when rising from the marsh they made a noise like thunder" (Barnett 1971).

The bounty of the marsh provided the small settlement of York with wild game. Less than a century later, with the invention of the breach-loading shotgun, hunters were able to slaughter wildfowl by the hundreds. Frank Smith, a member of the Toronto Ornithological Club from 1942 until his death in 1965, recalled how Bill Loam, a market shooter who made his living hunting and fishing in the marsh, would "come into his boathouse at night with the boat so full [of ducks] that there wasn't room for one more" (Fairfield 1991).

Frank Smith himself hunted in the marsh and said:

> I have seen thousands of Muskrat houses built in it at one time and am safe to say that as many as ten to twelve thousand rats would be taken in one spring. . . . It was a problem catching Mud Turtles. The best way was undressing and taking a sack, walk in the water up to your armpits and when you stepped on a turtle you would duck under, get him and put him in the sack [sic]. I have taken as many as seventy-five to a hundred in one day in this way and sold them in the market for turtle soup (Fairfield 1991).

In the 1850s, storms broke through the sandy peninsula that separated the marsh from the lake, creating the Toronto Islands. Subsequent erosion problems induced the City in 1890 to build a breakwater on the western edge of the marsh, closing water circulation between marsh and harbour.

Sealed off from the lake, and the recipient of large quantities of industrial, human, and animal wastes, particularly from Gooderham and Worts's cattle byres, the bay became stagnant and polluted. Coatsworth Cut was opened at the east end of the marsh to improve circulation but a more permanent solution was proposed: fill the marsh to create lakefront industrial land.

In 1912, the City accepted plans by the Toronto Harbour Commissioners, and by 1930 garbage, building rubble, and sediment dredged from the harbour covered most of the marsh. The remainder was filled in the 1950s to make way for the Main Sewage Treatment Plant. Ashbridge's Bay, once home to a complex and rich wildlife community, has been replaced by salt and coal storage, oil tanks, industrial buildings, and vacant lots.

Nonetheless, thanks to benign neglect, a wide variety of plant and animal species have colonized these vacant lots and the north shore of the Outer Harbour. Together with the natural communities on the Leslie Street Spit and the hoped-for rehabilitation of the mouth of the Don River, these natural areas in the Port Industrial Area would symbolically revive the natural heritage buried beneath the soil.

Sources: Barnett, J. M. 1972. *"Ashbridge's Bay."* Ontario naturalists 9(7); Fairfield, G. (ed). 1991. *Ashbridge's Bay.* [Unpublished manuscript].

Inner Harbour. The river delta was replaced by new industrial lands, with docks, a ship channel, and a turning basin, as well as road and rail connections to the rest of the City.

Creation of the East Bayfront started much later, in the 1950s, after complicated negotiations among the Harbour Commissioners, the City, and the railways. The new land was used for docks, wharfs, and shipping-related industries, such as Redpath Sugar.

The physical restructuring of the Lower Don Lands continues today. Additions are still being made to the Leslie Street Spit, the four-kilometre (2.5-mile) long peninsula created from lakefill and begun in the early 1960s as a protective breakwater for an Outer Harbour. It soon became clear that Toronto had no need of a second harbour, and the spit has developed through natural succession into a rich wilderness area. The most recent land creation project in the Lower Don Lands is the Outer Harbour Marina, begun in 1986, to provide mooring slips for recreational boats, and a marina centre at the base of the breakwater.

Ashbridge's Bay with Toronto in the background

Though the splendour of the THC 1912 plan has faded, a rich industrial heritage remains: the plan's "armature" — the docks, bascule bridges, Ship Channel, bridges, railways, and roads — still forms a strong pattern on the land. Large structures such as silos, cranes, chimney stacks, and fuel storage tanks are dominant landmarks evoking past and some present industrial activities. The Gooderham and Worts buildings, the Palace Street School at the corner of Front and Cherry streets, and the former Bank of Montreal on Cherry Street are unique and worth preserving for their architectural merit. The industrial heritage manifested in the area's infrastructure and built form — in the grand scale of Commissioners Street, the pattern made by docks and seawalls, the cranes and tanks — should be treated with respect and, where possible, be used as the basis for future development.

The industrial heritage manifested in the area's infrastructure and built form — in the grand scale of Commissioners Street, the pattern made by docks and seawalls, the cranes and tanks — should be treated with respect, and used as the basis for future development.

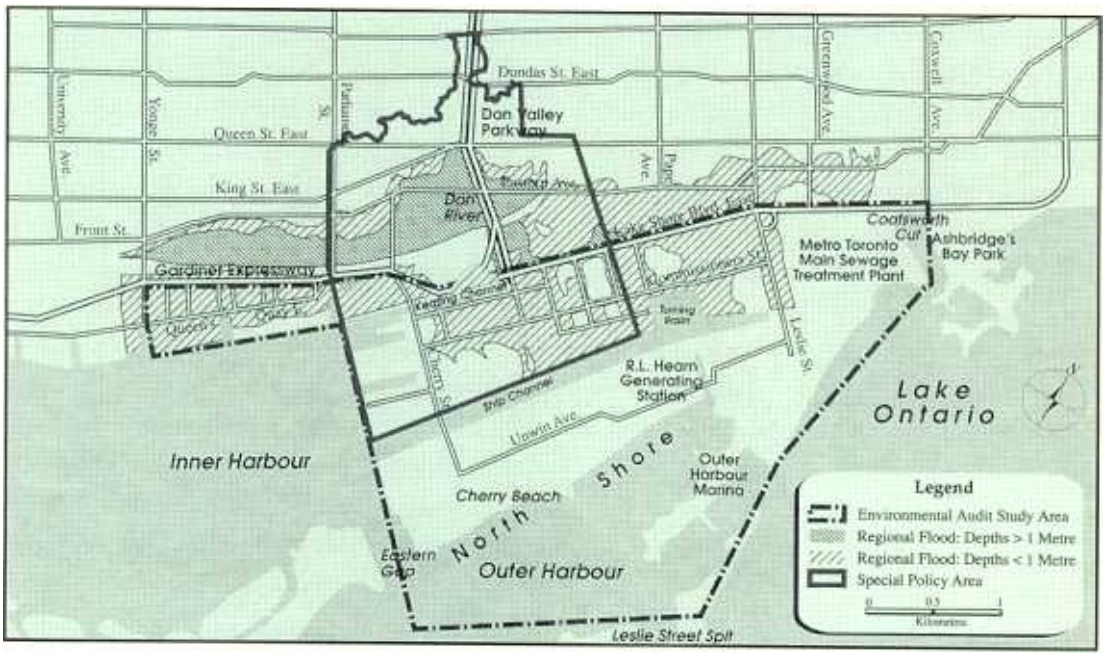
The location of the Lower Don Lands is still strategic — minutes from downtown Toronto — but the area is underused, shabby, and neglected. Expropriations in Ataratiri have left blocks of empty buildings. Many industries, once long-term tenants in the East Bayfront/Port Industrial Area, have also departed, leaving behind empty structures or barren lots. On average, Toronto's industrially designated lands provide jobs for 79 people per hectare (32 people per acre); by contrast, density in the Port Industrial Area is only 11.6 employees per hectare (4.7 employees per acre).

The Lower Don Lands also provide a wide range of recreational activities: sailing, rowing, and boardsailing clubs cluster along the north shore of the Outer Harbour, larger boats are moored at the Outer Harbour Marina and Ashbridge's Bay Park, and Cherry Beach remains one of the Central Waterfront's cleanest for swimming. Naturalists haunt the area, while joggers, hikers, and cyclists use the Martin Goodman Trail, and some venture up the Lower Don Valley. Nonetheless, many of these recreational amenities are underused, in part because access is difficult and unattractive.

Virtually all the Lower Don Lands lie in the floodplain of the Don. If there were another regional storm of the magnitude of 1954's Hurricane Hazel, large parts of the area would be flooded to a depth of as much as one metre (three feet) of water, with some places being affected even more seriously. Modelling undertaken for the Ataratiri Environmental Evaluation Study showed that almost 3,800 dwelling units, and more than 900 businesses employing more than 23,000 people, are vulnerable to flooding in the Lower Don floodplain.

Under the Flood Plain Planning Policy Statement issued by the ministries of Natural Resources and Municipal Affairs, new development that is susceptible to flood damage is not normally permitted. However, municipalities may apply for special policy area status that allows controlled development in areas where new development cannot be restricted. The City of Toronto has applied for a special policy area in the Lower Don floodplain to permit development

Map 10.11 Lower Don flood plain



of Ataratiri, and a variety of measures are being considered to reduce the flood risk there.

The Lower Don Lands share other environmental problems: in many places, soils are contaminated with heavy metals and organic chemicals, in part because of the way lakefilling was done. For example, the Port Industrial Area was created from construction debris, sewage sludge, incinerator ash, and municipal garbage, as well as from sand. Construction of the Leslie Street Spit utilized earth fill from downtown Toronto (some of which was undoubtedly contaminated), and also rubble, incinerator and fly ash, and crushed battery casings. In the rail corridors, the Ataratiri lands, and the Port area, problems were compounded by spills, leaks, storage, and disposal of hazardous materials. When soil is contaminated, it is likely that the groundwater beneath it is contaminated as well.

The environmental audit of the East Bayfront/Port Industrial Area found some contamination of soils and/or groundwater at 27 of the 28 sites studied by the Royal Commission and by others (out of a total of 123 sites in the area). Although it is difficult to generalize — types and levels of contaminants vary greatly from site to site and across individual sites — these studies show that the soils and groundwater at some places are heavily contaminated. The MOE's clean-up guidelines are exceeded for a number of heavy metals: while there are no provincial guidelines for specific organic compounds, studies show that benzene, ethylbenzene, toluene, xylene, PAHs, and PCBs are present. At some sites, groundwater is contaminated with heavy metals and organic compounds as well as with free-phase floating petroleum products.

According to the *Ataratiri Draft Environmental Evaluation Study Report*