

The Rouge Park



The Rouge Park

An Introduction

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prepared for

The Rouge Park Council

by

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Parts of the Rouge Park, especially farmlands and residences, are privately owned or leased. Please stay on park trails, and do not trespass.

Cette publication est également disponible en français.

A New Kind of Park

Ask a conservationist about the Rouge valley, and the talk soon turns to superlatives - the best remaining forest habitats in Metro Toronto; the best example of lakeshore marsh; the greatest diversity of plant life, of mammals, of fish; the biggest nature reserve in southern Ontario; the only intact natural corridor linking the Oak Ridges Moraine to Lake Ontario.

Until recently, such talk would also soon turn to worries about the future of this special island of life. For the Rouge is set within Canada's largest urban area, and a rapidly growing population could easily overwhelm its natural splendour.

In response to these concerns, the Ontario government announced in 1994 that the Rouge will become the largest park ever created within an urban area in North America - 11,600 acres (4700 hectares) in all.

The Rouge Park is remarkable not just for its size. It presents a new approach to park management for Ontario, a partnership model that includes lands owned by several levels of government. The coordinated efforts of many agencies will provide future park management. Valley corridors upstream to the Rouge headwaters will be protected, with private lands in those corridors gradually added to the park or managed by agreement where possible. Restoration of damaged ecosystems will be a priority, with human uses limited to those that do not harm the natural setting.

Unprecedented public support spurred the creation of the Rouge Park, and continued support will be needed as the new park begins the long process of ecological healing. Working with park managers, volunteers will play a key role in creating a healthier future for the Rouge - planting new forests, restoring habitats for fish and birds, introducing park visitors to nature close to home.

This booklet will give you a glimpse of why the Rouge is so special, and how ordinary people are helping in its renewal.



Life in the Landscape

The landforms of the Rouge Park record a long history of past events and past life. The cutting action of the river has sliced down through layers of the past, exposing a geological journal of great changes.

The foundation layer, for example, is Whitby shale bedrock, formed from the muds of a shallow inland sea some 450 million years ago. The shale is exposed along the river in only two locations, both south of Twyn Rivers Drive, but these small sites have yielded two distinctive species of fossils named after the Rouge. These fossils, and the remains of many other marine invertebrates found in the shales, provide a window onto the abundant life of the very distant past.

In most parts of the park, the bedrock is covered by a thick mantle of gravels and other loose materials laid down by a series of glaciers over the past 500,000 years. The story of these glaciers is recorded in the "layer cake" formations along parts of the Rouge. The top layer - the surface landforms visible today - tells the story of the most recent glacier, which melted away only 13,000 years ago.

Most of the tablelands along the Rouge are composed of Halton tills - a mix of silts and sands smeared beneath the glacier as it advanced. Some of this material has been shaped into elongated ridges known as drumlins. To the north, the headwaters of the Rouge rise in the Oak Ridges Moraine. This hummocky ridge of deep sands and gravels was created between the melting fronts of two lobes of the glacier, with one lobe advancing from Lake Simcoe, the other from Lake Ontario. The Moraine is vital to the health of the Rouge River, for it provides a steady supply of cool groundwater to its upper reaches, and supports a wide variety of important natural habitats.

Other changes took place in the wake of the glacier's retreat, as changing water levels in the Lake Ontario basin produced shoreline features such as bluffs and beaches. In the Rouge valley, the most prominent of these features are sand spit formations created along the former Lake Iroquois bluff about 12,000 years ago. Much of this sand has been

A glimpse through the curtains of time

Imagine a mattress of ice, two kilometres thick, grinding its way across the landscape, ploughing and re-arranging everything in its path. Little wonder that evidence of what went before is so sparse. But in the lower Rouge valley, and a few other places in the Toronto area, layers of sediment in bedrock valleys were sheltered from the last glacier. These traces of the past can tell us much about climate and life forms in the warm periods between glaciers.

The lower Rouge exposures show a cross-section of the Don Beds, a sequence of clays and sands laid down about 125,000 years ago when the climate was warmer than today. These layers are rich in fossil remains and pollen, showing a diverse deciduous forest with oak, maple, hickory and sweet gum, and with such animals as giant beaver, brown bear, bison and mastodon. On top of this is a layer of finer sediments known as the Scarborough Formation, which records a cooler climate as the glaciers drew nearer. Pollen from this formation reveal a boreal type of forest, with pine, spruce and birch becoming dominant.

Another intriguing aspect of this site is the evidence of faulting in these layers and the underlying bedrock, which strongly suggests earthquake activity at some point in the past. Study of the implications of this faulting in assessing seismic risk for the Metro Toronto area is ongoing.

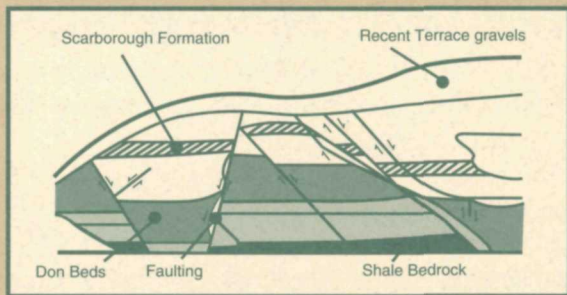


Illustration adapted from Eyles and Boyce, 1991.

removed for aggregate; one site is now occupied by the Beare Road landfill site.

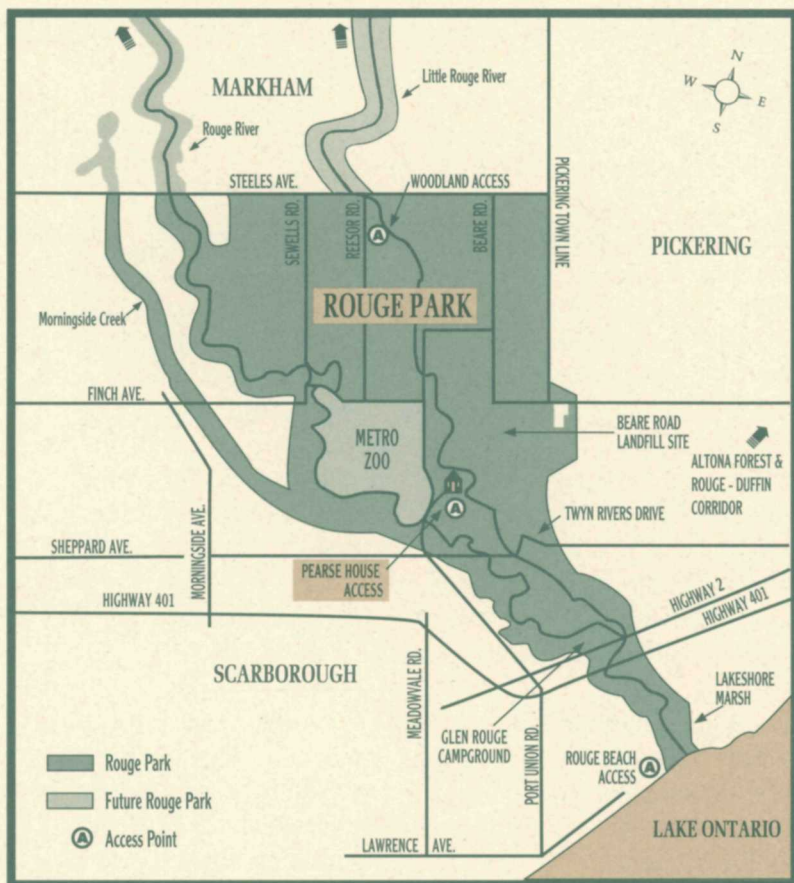
A special chapter in the Rouge's geological record relates to bluffs near Twyn Rivers Drive where the river has exposed layers of sediment deposited prior to the last glaciation. For scientists seeking to understand how climate and landforms have changed over time, these rare exposures are of international significance.

The creation of landforms is not confined to the past; it is a process that continues today. The same shoreline processes which created beaches and bluffs on the shores of glacial Lake Iroquois can be seen today along the Lake Ontario shores at the mouth of the Rouge. The river itself, especially in its lower reaches, is very actively cutting into high banks in some areas, and laying down sand in others.

While this is a natural process, the rate of erosion has been increased dramatically by the clearing of the farmlands in the Rouge watershed, and by the increased run-off from urban developments, which threatens some of the environmental values in the valley. The creation of the Rouge Park will help protect significant landforms and give the river the space it needs to continue its natural meandering pattern.

The lakeshore marsh at the mouth of the Rouge is another landform which experiences ongoing change. In periods of high lake levels, cat-tails and woody vegetation die back, leaving a marsh with more open water. The partial regulation of water levels in Lake Ontario and the increased load of silt entering the marsh from upstream appear to be decreasing the size and diversity of this wetland area.

The Rouge Park 1995



Life Among the Trees

The extensive forests of the Rouge Park provide a continuous wooded corridor linking the lakeshore to the Oak Ridges Moraine, and form the most significant core area of natural habitats in the Metro Toronto area. A number of the Rouge woodlands, such as those in the Finch meander area, are old-growth in maturity, with trees dating back to the first logging era 130 to 150 years ago.

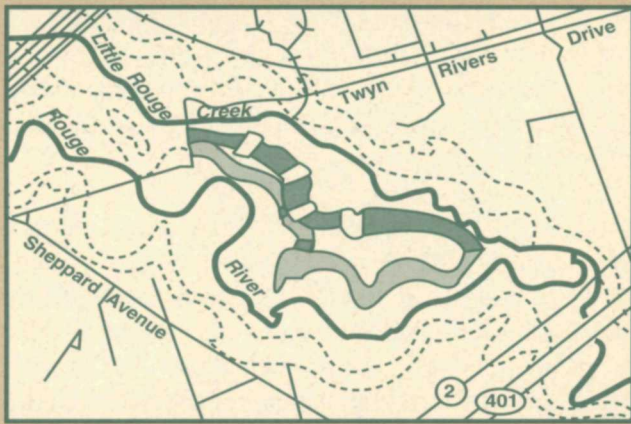
The types of trees which grow in specific locations within the park are closely linked to climate, landform, and history. The bottomlands and lower valley terraces support stands of Manitoba Maple and Crack Willow, species adapted to the frequent flooding and past disturbance by grazing and other activities. Other former pastures and fields have been colonized by such pioneer species as White Birch, Trembling Aspen and Green Ash.

While much of the mature upland woods are dominated by Sugar Maple, climate has a strong influence on associated species. The Rouge Park is at the northern limits of the Carolinian hardwoods forest, so deciduous trees and some 28 southern plant species are found on the warmer southfacing valley slopes and bottoms. The Sycamore tree, for example, has its northern-most natural occurrence in the park. Since the Carolinian zone covers less than 1% of Canada's land mass but has 25% of the country's population, these protected forests in the Rouge Park are an ever-more valuable example of a threatened ecosystem.

Parts of the Rouge forest are more characteristic of the mixed Great Lakes forest to the north; more than 40 northern plant species occur within the park, and both Balsam Fir and Hobblebush reach their southern limits here. These more northern forest types are increasingly frequent in the higher reaches of the Rouge watershed, away from the moderating influence of the lake. The moderate climate of the Rouge mouth provides an annual frost-free period of 175 days; even at Markham in mid-watershed, the period without frost is only 129 days.

Virtually all of the Rouge forests have been influenced to some degree by human history in the area. Native villages along the Rouge cleared some areas for crops; European settlers removed over 90% of the original forest in the area by the 1890s. The diversity and health of forests in the Rouge Park today are a testament to this ecosystem's ability to renew itself. With permanent protection provided by the park, and with help where needed to get woodlands started or remove non-native species, the forests of tomorrow will grow even stronger.

The Lay of the Land



The direction of slope has a surprisingly strong effect on the warmth and wetness of individual sites. This "microclimate" plays an important role in where trees occur. For example, on the ridge south of Twyn Rivers Drive, north-facing slopes (shown in dark shading) have Hemlock stands, which prefer cool moist conditions. The warmer, drier, south-facing slopes (shown in dots) are dominated by Red Oak, which can thrive in conditions with greater light intensity and higher surface temperatures.

-- Illustration from Varga, Jalava and Riley, 1991.

The Hidden Life Within

The Rouge Park hosts an exceptional diversity of wildlife - at least 762 plant species, 123 types of breeding birds, 55 fish, 27 mammals, and 19 reptiles and amphibians.

In part, this richness is a reflection of the quality of natural conditions - the relatively clean and cool waters of the Rouge River, for example, can support a much broader range of fish than most urban streams. The diversity of species is also directly related to an exceptional diversity of natural habitats. The complex interplay of soils, slopes, moisture, and land use history along the Rouge have produced an array of 110 different native vegetation communities.

Some of the most significant habitats of the park are the large blocks of woodland with "interior forest" conditions, a pattern that has become increasingly rare in southern Ontario. These are the habitats of nesting birds that demand deep woods, such as Pileated and Hairy Woodpeckers, Wood Thrush, Scarlet Tanager and Ovenbird. Future management of the park will increase the extent of interior forest habitats, by enlarging existing forest blocks and strengthening corridors and connections between them.

Wetland habitats are scarce within the park, and their special value is enhanced by breeding populations of such rare species as Least Bittern, Virginia Rail, and Blue-gray Gnatcatcher. Wetlands are very important to the reptile and amphibian populations of the park, and the decline or loss of Yellow-spotted Salamanders and Northern Water Snake can be linked to the historic loss of wetland habitats.

East of the Rouge River mouth, the constantly changing sand patterns along the lakeshore support a distinctive community of beach strands and wet meadows. These specialized habitats support native plant species found only along Great Lakes shorelines, such as Sea-rocket, Bushy Cinquefoil, and Seaside Spurge.

Birds of the Shadows

A bird of the most brilliant shade of crimson, with contrasting black wings and a loud voice often described as "a robin with a sore throat" - you would think the Scarlet Tanager would be easy to pick out. But in fact this reclusive insect-eater is often missed, for it spends its day moving sluggishly through the shadowy canopy of what a naturalist a century ago called "the retired parts of the woods".

That preference for deep woods, undisturbed by nearby fields or houses, has led to a decline in populations of Tanagers in southern Ontario, as forests became more and more fragmented into smaller pieces. In Toronto and other urban areas, they are rare indeed. But the Rouge Park has Scarlet Tanagers, a dozen pairs or more, nesting in the larger blocks of mixed and deciduous woodland.

Typical of the birds of the interior forest, the Scarlet Tanager can act as a sentinel of the future quality of the woodlands of the Rouge. As tree-planting and natural succession enlarge the forest core, we should see a growing population of this and other denizens of the deep woods.

Many of the common wildlife species in the park are associated with habitat edges, where fields meet forest, for example. White-tailed Deer, Red Fox, Coyote, Great Horned Owl and many other typically rural species benefit greatly from the complex natural patterns of habitat edges associated with the valley slopes, and the overlay of fields and younger habitats created by past human disturbance. The size of the Rouge Park allows large predators such as Coyotes to maintain a natural balance, keeping such species as skunks and raccoons from reaching the artificially high populations that cause problems in many urban areas.

Despite the wealth of wild species in the park, not all the news is good. A healthy population of Black Terns in the Rouge mouth marsh as

recently as 1973 has all but disappeared as a breeding species. The once-common Red-shouldered Hawk, which nests in mature forests, was last recorded nesting in the Rouge in 1985. Loggerhead Shrike bred in the Rouge area into the 1960's, but now is endangered across its Ontario range and is absent from the park.

On the other hand, Cooper's Hawk recently began nesting again in the deep woods of the park after a prolonged absence. Volunteers from community groups have built and installed over 350 bluebird boxes in the Rouge watershed since 1993. At least three pairs of the provincially-rare Eastern Bluebird have returned to the park to nest as a result. Future management of the Rouge Park should create more of these wildlife success stories. Strengthening the linkages upstream to the Oak Ridges Moraine and eastwards along the Rouge-Duffin corridor will be critical. With determined effort, it seems reasonable to hope that the Rouge watershed will once again support spawning Atlantic Salmon, or that Osprey, now nesting in the Rouge headwaters at Bruce's Mill, will re-colonize the valley, or that River Otter, which lived on the Rouge until the mid-1950s, will return.

A Long History of Human Life

The natural features of the Rouge have long attracted human use. A rich archaeological resource in the valley traces Native use for more than 10,000 years, based largely on hunting, fishing and gathering of wild plant foods. Over the past 700 years, Native agriculture resulted in periodic clearing of parts of the valley to grow corn, beans and squash.

Early Villages - Early Trails

On a knoll near the Rouge River, the French explorers Péré and Joliet visited a large village of the Seneca in 1669. This was an important location for the Seneca, a base to consolidate their military expansion north from New York State, and to control the supply of furs from the upper Great Lakes for trade with the Europeans. But why here, just inland from the mouth of the Rouge?

First, perhaps, because of strategic location. From this village called Ganestiquiagon, a portage route later known as the Rouge Trail led northwards along the ridge between the forks, to provide a vital link to Lake Simcoe and the upper Great Lakes.

Second, the sandy, easily-tilled soils of the surrounding area provided a good base for Native crops, and the mild climate near the lake helped both crops and human comfort.

Third, the presence of the river's first rapids nearby meant another important food source, when spawning fish clustered at the rapids and were easily netted or speared.

It must have seemed an ideal spot. More than a century later, when Governor John Graves Simcoe selected lands to complete his military allowance, he chose exactly the same location. Two centuries after that, in 1993, the federal and provincial governments committed the funds necessary to purchase the site as part of the Rouge Park.

Agriculture was especially extensive around the years 1300-1500, when at least three Iroquoian villages were located along the lower Rouge.

Another Seneca settlement occurred in the late 1600s, again clearing parts of the forest for agriculture. These were not isolated villages - archaeological investigations along the Rouge have discovered artifacts from Wisconsin and Chesapeake Bay that arrived through native trading, as well as early European trade goods. Such sites can tell much about life in these early Ontario communities, and about the plants and animals around native villages. Remains of wildlife species that are now extinct, such as Passenger Pigeon, show up in village middens.

The changes brought about by European settlement are much more visible on today's landscape, even though this period represents only 4% of the human history of the Rouge. Names from the two main groups of European settlers are still strongly associated with the lower Rouge - the Reesors, part of a strong Pennsylvania-German Mennonite community in Markham and northeast Scarborough; and British families such as the Sewells, the Milnes, the Beares, and the Pearses.

It was the stands of large oak and pine, the legacy at least in part of earlier native corn fields, that first attracted the attention of the Europeans in the early 1800s. A "mast road" ran along the ridge between the Rouge and the Little Rouge, taking immense White Pine logs and squared timbers down to the river mouth, where they could be shipped overseas to build great wooden sailing ships.

Soon the fertile soils of the uplands attracted farmers too, who laid out the pattern of fields, farmsteads and hamlets which still give their character to the northern parts of the park. The abundance of local wood encouraged the use of board-and-batten, clapboard, and vertical board siding for most farmhouses and public buildings, which can still be seen today. Some houses that were subsequently bricked, such as Pearse House, still have Rouge valley boards underneath. Much of this period of cultural heritage will be retained as an ongoing part of the Rouge Park, together with an extensive agricultural preserve on provincial lands to the north and east.

The river itself was an important pioneer resource as well - by 1850 a map of Scarborough showed 14 sawmills and gristmills on the Rouge in that municipality alone. The ruins of Maxwell's grist mill and millrace can still be seen along Twyn Rivers Drive. Ironically, the cutting of the forests in the Rouge watershed to supply the sawmills resulted in a lowering of the water table, reducing the steady supply of streamwater that powered the mills, and putting some out of business.

The more recent history of the Rouge area, especially since World War II, has been less kind to its landscape. Hydro and pipeline corridors, rail lines and expressways cut across the valley. Large gravel pits removed over 200 acres (80 hectares) of glacial landforms, and even extracted large sections of the river bed. A ski hill, picnic areas, campgrounds, golf courses and the Metro Zoo all affected natural habitats. Housing and industrial development on adjacent areas removed important habitats, and discharged stormwater and silt into the valley. A portion of the Little Rouge valley was used as a landfill site for Metro Toronto garbage for 16 years.

Without the establishment of the Rouge Park, the unique natural heritage of the valley appeared certain to continue a pattern of progressive decline.

New Life for the Rouge

The movement to preserve the Rouge valley began not with a slow recognition of its natural values, but with a flood - literally. The disastrous flooding associated with Hurricane Hazel in 1954 destroyed or caused the removal of more than 125 homes and buildings along the Rouge, ruined two miles (three kilometres) of roads, and caused over 20 realignments of sections of the river. Shortly thereafter, the Metro Toronto and Region Conservation Authority, with the backing of the Province, began buying up valley lands to prevent further hazards to life and property.

But upstream, other plans were afoot. In 1972, the federal government began acquisition of 30 square miles (7800 hectares) of north Pickering countryside for a new airport. Two years later, the provincial government followed suit with the acquisition of another 30 square miles (7800 hectares), including a major section of the Little Rouge River, for the new city of Cedarwood.

It was soon clear that the vision of the two senior governments for this area was not matched by local support. Citizen protests moved the airport proposal to the back burner, where it remains today, and prompted a scaling-back of urban expansion plans to smaller, carefully-planned centres such as Cornell. Massive citizen involvement led to support from Scarborough, Markham, and the federal government for a Rouge Park. Citizen groups, especially Save the Rouge Valley System Inc., stressed the need for a strong park concept to protect the Rouge from further development proposals, landfill sites, transportation corridors, and the effects of growing recreational use.

In 1994, after considering the recommendations of the Rouge Valley Park Advisory Committee, the Province officially announced the boundaries and a detailed management plan for the Rouge Park south of Steeles Avenue. Construction of new roads was prohibited in the valley within Metro Toronto. A corridor of provincial lands along the Little Rouge River was added to the park, in conjunction with a new agricultural preserve to protect 8000 acres (3240 hectares) of farmland. The

Province also announced that the Rouge Park would eventually include corridors right to the headwaters along the major tributaries of the Rouge, linking the park to the Oak Ridges Moraine, where another provincial protection strategy was under development.

Much remains to be done. Parts of the Rouge Park have been badly abused in the past, and Nature's healing process needs help from park managers and volunteers. Ongoing public support will be vital to achieving the vision of a continuous Rouge Park from Lake Ontario to the tributary headwaters. Recreational visitors to the park may need to be reminded often that this is a park where Nature has priority, and where limits on human use are necessary.

Achieving future park management goals will be the responsibility of a new Rouge Park Council, a coordinating body to orchestrate the activities of various municipalities, agencies, and groups with a hand in the park. But to a large degree, future progress will also depend on the support and involvement of local residents and park visitors. If you would like to help, drop in at the Interpretive Centre at Pearse House or call the Rouge Park at 416-28-ROUGE (287-6843).

10,000 Trees for the Rouge

Six years ago, a group of volunteers affiliated with Save the Rouge Valley System Inc. and the Rouge Valley Foundation decided that the restoration of the Rouge forests should wait no longer. 10,000 Trees for the Rouge was born, with a goal of re-creating natural habitats along the valley.

Each year, volunteers negotiate suitable planting sites, buy a mix of native trees and shrubs, and organize a volunteer planting day. The big day in April brings 800-1000 volunteers to the field, and another piece of forest is born. Over the past six years, this group has planted more than 48,000 trees in sites in Richmond Hill, Markham and Scarborough.

10,000 Trees for the Rouge is now working towards a five-year plan, and many parts of the park will benefit from their volunteer help. If you want to know more about getting involved, ask the park for information at 416-28-ROUGE (287-6843).

For More Information

The following publications provide much more detailed information about the resources and management of the Rouge Park:

Eyles, N. and J.J. Boyce. Earth Sciences Survey of the Rouge Valley Park, Ministry of Natural Resources, 1991.

Mayer, Pihl, Poulton and Associates Incorporated. The Archaeological Facility Master Plan Study of the Northeast Study Area, prepared for the City of Scarborough, report on file, 1989.

Metropolitan Toronto and Region Conservation Authority. Rouge River Fisheries Management Plan, Part 1: Management Strategy, December 1992.

Province of Ontario. Rouge Park Management Plan, 1994.

Richardson, A.H. and A.S.L. Barnes (eds.). Rouge, Duffin, Highland, Petticoat Conservation Report, Department of Planning and Development, Ontario, 1956.

Unterman, McPhail, Cuming Associates. Built Heritage Inventory, Rouge Valley Park, 1992.

Varga, S., J. Jalava and J.L. Riley. Ecological Survey of the Rouge Valley Park, Aurora: Ministry of Natural Resources, Southern Region, 1991.

The Rouge Park Council

The current partners involved in the formation of the Rouge Park Council, which will coordinate park management activities, are:

Government of Canada
Province of Ontario
Metropolitan Toronto and Region Conservation Authority
Municipality of Metropolitan Toronto
City of Scarborough
Town of Markham
Save the Rouge Valley System Inc.





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