

Torontonians are bombarded with reports on environmental indicators. We are increasingly obsessed with the quality of those elements that are essential to our basic health: primarily air and water, but also light (uv index) and soil (waste disposal and brownfields). However, one environmental element to which we pay remarkably little attention is sound.

All living organisms are affected by their sonic environment. Without concern for healthy-sounding surroundings, we allow ourselves to be exposed to acoustically toxic conditions that negatively affect our health and sense of well-being. The largest culprit of acoustic toxicity is noise, which is defined as 'unwanted sound' and is characterized by its intensity, frequency, periodicity and duration. Most people would be surprised to know that we are affected more by noise exposure than any other environmental stressor. Yet, because the perception of noise is subjective and because the associated health effects of noise exposure are not considered as immediately life-threatening as those of other environmental elements, it is regularly pushed to the bottom of the priority list.

The effects of noise exposure on public health have been hypothesized since at least the 1960s. By the 1970s, research on noise and public health was being conducted in most developed countries, and shared through the International Commission on Biological Effects of Noise, a society of research scientists dedicated to co-operation and the distribution of information related to all aspects of noise-induced effects on humans and animals. The cumulative research results were significant enough for several Western European and North American countries to make science-based recommendations for changes in public health policy.

The Health Council of the Netherlands, which convened the international Committee on Noise and Health in 1993, has conducted the most

significant research on noise pollution to date. Its 1994 report, *Noise and Health*, is the baseline for understanding the health effects of noise exposure. This committee has produced sufficient data to prove that the long-term effects of noise exposure at levels over 80 decibels – the frequency of regular city traffic noise – can cause hearing impairment and hearing loss. More importantly, regular exposure to noise levels between 65 and 80 decibels – the loudness of an average vacuum cleaner, hair dryer, dishwasher, washing machine or car engine – can also lead to hypertension and heart disease, and can have an important psychological impact, leading to feelings of annoyance, various forms of sleep disturbance and diminished cognitive and social performance.

Data in the report also suggests limited connections between noise exposure and negative effects on the immune system, changes in hormone levels (specifically adrenaline), low birth weights and the exacerbation of psychiatric disorders. An especially alarming result is that noise exposure puts children at higher risk for hypertension and decreased cognitive performance, the latter of which affects language development, reading skills, socialization and overall school performance. Such negative impacts can lead to greater handicaps and a reduced quality of life in the long term.

The United Nations Environmental Programme's GEO 2000 report pushes the severity of these facts further by noting that urban noise is an important problem, specifically within European and Central Asian cities that regularly exceed maximum acceptable limits. With more than half of the world's population now living in urban centres, noise pollution is positioned to be a major public health issue in the twenty-first century.

## **A short history of noise in Toronto: 1970–2000**

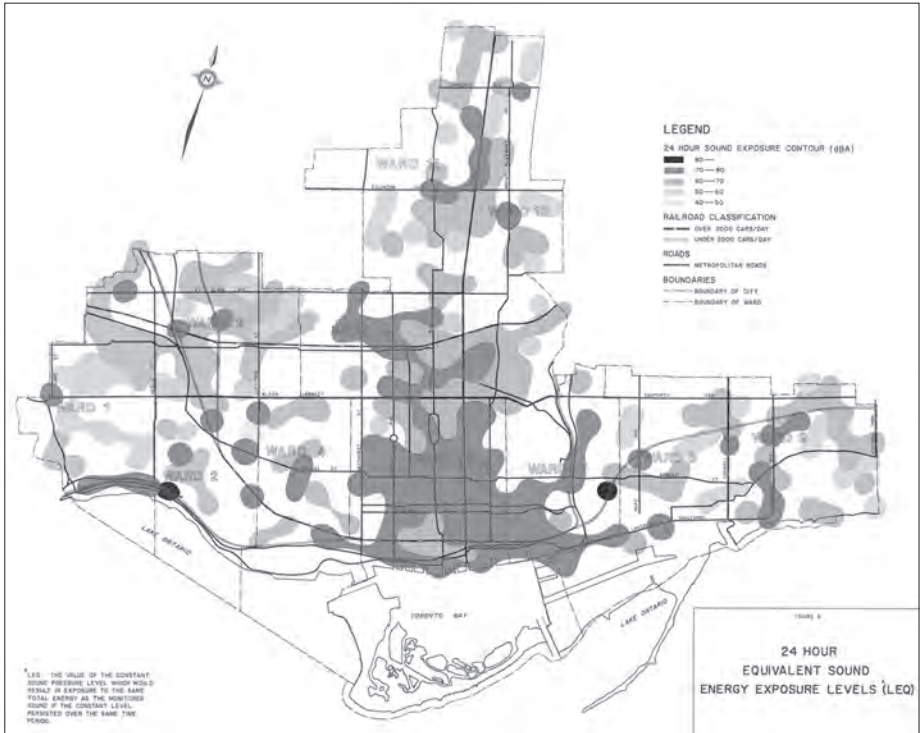
Fortunately, the modern history of noise in the City of Toronto is one full of innovative thinking.

In May 1971, City Council charged the Department of Public Works with investigating the physical and psychological effects of sound on citizens, and with making appropriate recommendations based on its conclusions. Two years later, it issued the comprehensive Noise Control Study, a response to what was credited in the report's preface as citizen concern that 'action be taken on this very subjective pollutant.' Using a sophisticated and unique 500-point noise-monitoring system based on an orthogonal grid mapped over the entire city, the study collected enough data to determine that Toronto's ambient noise level did not exceed 70 to 80 decibels. Maximum levels were isolated in industrial areas, with the city average hovering in the low 60s.

The only other city to which the report could make reasonable statistical comparisons was London, England, which was on average 3 decibels louder in residential areas and up to a huge 13 decibels louder in industrial zones. It also placed Toronto as quieter than New York City, Chicago and Berlin. Through an extensive social survey, the Toronto study also determined that 65 decibels – the level at which public speech becomes restricted – was the noise threshold at which Torontonians suffered disturbance and annoyance. Here, it is important to note that increases in decibel levels are logarithmic, meaning that an increase from 60 to 70 decibels will be perceived as twice as loud by the human ear. Thus, a sustained increase in overall city sound of even a single decibel would be noticeable, but still tolerable by the public.

Although the October 1973 report determined that Toronto was not yet a noisy city, the concern that noise levels and exposure would increase with greater density of living remained. Working with the assumption that human activity produces noise, and that a certain amount of noise must be accepted as part of urban development, the study recommended Toronto restrict any unnecessary noise through a combined approach of pollution control at the source – using a combination of attenuations, public education and industry co-operation – and ambient-level monitoring using the established grid system. This recommended method flew in the face of strategies used by larger and noisier cities. At the time, New York City adhered to a plan of noise standards that established noise limits and fines for exceeding such limits, an unsuccessful approach that the Toronto noise-study team viewed as tantamount to a tacit licence for noisemaking.

As a result of the study's recommendations, the City swiftly implemented Toronto's first Noise Control Programme in December 1973. The program



Map from Toronto's first Noise Control Program progress report (1982), visualizing the results of a unique 500-point monitoring system. Only two small areas exceed the dangerous 80-plus decibel level.

was assigned to a specifically created Noise Control Branch, again a unique approach. This eight-person team was responsible for enforcing the city's new anti-noise bylaw, dealing with citizen complaints, setting guidelines for sound attenuation of City equipment and buildings, conducting noise monitoring and neighbourhood surveys, and offering public education.

The branch's first progress report, covering 1974 to early 1982, was released in May 1982. The results of continued ambient-noise-level monitoring showed minimal changes, somewhere within the expected levels of 1 to 4 decibels. Shockingly, though, the number of citizen noise complaints had more than doubled in the same period. These complaints were attributed to a number of factors, including denser living conditions, greater adoption of new technologies, increased mixed-use areas in the city and an overall greater public awareness of the sound environment.

The branch's second report, delivered in January 1988, continued on the trajectory of its first. Noise complaints rose again, this time by about

70 percent. Air-conditioner noise was pegged as an increasing problem. The branch responded by working with the industry to set standards for more silent units and by educating the public on respectful use. The proliferation of boulevard cafés led to an increased number of outdoor sound systems, which came to be controlled through licensing and permissions. The racket of nighttime refuse collection became a contentious issue due to the growing number of downtown residential enclaves. As well, industrial noise became even more of an aggravation where residential spaces started buttressing up against industrial facilities. Yet, despite all of these changes, Toronto remained one of the quietest cities in North America. Ambient and special noise monitoring between 1982 and 1986 recorded background noise growth at only 1 to 2 decibels in most areas, with noise levels actually decreasing in the east and central parts of the city. Overall, the ambient noise level stayed within 60 to 65 decibels, just below the tolerance threshold.

In the third and what appears to be final progress report, issued in 1994 and covering the years 1987 to 1993, the Noise Control Branch cited ongoing changes to the city fabric and public attitudes – especially increases in incompatible land use, growth in new technology use and a decreasing tolerance for environmental noise – as factors drawing the effectiveness of the noise bylaw and existing program into question. Unfortunately, no comparative data is available for the period 1994 to 1998, making it impossible to take a final snapshot of Toronto’s sound environment before amalgamation. However, based on the 1994 report’s tone and contents, the best ways in which to monitor and control the growing noise levels were clearly coming back into question.

References to the city’s Noise Control Branch continued post-amalgamation, up until 2000. At that time, it was suggested that various components of the Noise Control Programme be divided up among other departments, including Works and Emergency Services, Corporate Services and Public Health. Given that any searches for a Noise Control Branch within the city’s current administration have proved unsuccessful, one can only assume that it has since been dispersed.

### **Introducing acoustic ecology**

It’s no surprise that Toronto was at the forefront of sound-environment analysis and control in the 1970s. Canadians have long been leaders in the appreciation of sound as an environmental issue, starting with Marshall McLuhan’s introduction of ‘acoustic space’ back in 1953, an idea he co-developed with anthropologist Edmund Carpenter at the University of Toronto.

This notion of acoustic space came to influence a great number of musicians, composers and acousticians, among them Toronto-raised and internationally renowned composer R. Murray Schafer and Vancouver-based composers Barry Truax and Hildegard Westerkamp. Together, along with other interested parties, the three reframed McLuhan's notion into a study of the sound environment and acoustic communication. Their work started in 1970 at Simon Fraser University under the banner of the World Soundscape Project (wsp), now known as the World Forum for Acoustic Ecology. By recording, observing and analyzing the sonic elements of space and place, wsp developed a vocabulary, notation system and comparative framework for the study of acoustic space and its human interpretations, interactions and feedback. The ultimate aim, which remains today, was to raise awareness of the effects of sound on the human condition. wsp's foundational work was encapsulated in Schafer's highly influential book *The Tuning of the World* (Knopf, 1977), a volume that set the standard for the field of acoustic ecology and is the bible for individuals who work with sound across numerous disciplines.

As Schafer describes, acoustic ecology is 'the study of the effects of acoustic environment, of soundscape, on the physical responses or behavioural characteristics of creatures living within it. Its particular aim is to draw attention to imbalances which may have unhealthy or inimical effects.' Thus, the fundamental framework for acoustic ecology is the soundscape, which refers to an auditory landscape experienced in a given place at a given time. Soundscapes exist anywhere humans are participants as listeners and contributors. Using a simple binary description method, soundscapes can be inhabited by 'lo-fi' or 'hi-fi' sounds. Lo-fi sounds are those that impose themselves indiscriminately and with increased levels of disturbance to the body, society and the environment. They provide little information, have the potential to mask important acoustic communications and are considered dull or uninteresting. Noise is the primary example of lo-fi sound. Hi-fi sounds are those with a low ambient-noise level that emerge discretely and with clarity, producing clear acoustic communication. A bird's chirp would be an example of a hi-fi sound. By extension, entire soundscapes can be analyzed and classified as lo-fi or hi-fi based on the type, combination and quality of sounds within them.

Truax, an internationally recognized electroacoustic composer and professor in Communications and Contemporary Arts at Simon Fraser University, expanded upon Schafer's notions of soundscape in his research for *Acoustic Communication* (Ablex, 1984), which explores the input and feedback from living creatures functioning within the soundscape. For Truax, the soundscape is made up of those sounds produced by people and

other living creatures as they interact with the environment, and includes non-human sounds that orient us within our everyday experience. Thus, within acoustic ecology, it is paramount that the flow of acoustic communications be sustained so that acoustic spaces may maintain the sonic relationships that clearly define them as individual soundscapes. Unlike Schafer's, Truax's sense of soundscape leaves room for lo-fi sounds as part of such communications. However, more often than not, these lo-fi sounds, especially noise, are treated as negative components.

The goal of acoustic ecology is to shape the knowledge of soundscape as a stimulant for the practice of acoustic design. As Schafer described it, acoustic design should function alongside architecture and urban design as a means of maintaining positive, healthy and communicative environments for city-dwelling creatures. To ignore acoustic ecology as part of city planning and design risks a number of negative impacts, including the erasure of soundmarks (those specific sounds that define a unique soundscape), the obliteration of clear acoustic territories, the introduction of noise pollution and the overall obstruction of acoustic communication.

What started as a uniquely Canadian approach to more fully understanding our environment, soundscape studies continue today among a growing community that spans the globe. Yet, thirty years after the first publication of *The Tuning of the World*, and twenty-three years after Truax's first edition of *Acoustic Communication*, the noise of urbanization and globalization continues to escalate. As a result, a consideration of sound and aural culture is resurfacing in many disciplines, specifically within architecture and design. The noise of human progress is once again reaching a threshold that cannot be ignored.

### **The future sound of Toronto**

A report commissioned by Toronto's Medical Officer of Health in 2000 warns of the impending growth in the city's noise levels. The GTA's population will grow by 40 percent by 2016 and corresponding automobile ownership is projected to grow by 60 percent, while it is expected that Pearson International Airport will accommodate an almost 100 percent increase in traffic, from 27 million to 50 million passengers, by 2010. The resulting impact on ambient noise levels from travel alone will be significant. An anticipated increase in outdoor festivals and music events will raise levels even higher.

Consequently, a 2001 follow-up report suggested that Toronto reinstate a uniform, city-wide noise-monitoring program matched by a set of remedial measures for when noise levels exceed the threshold for adverse effects. Unfortunately, no action has been taken on these

recommendations, so we currently have no idea how noisy we may become and what this means for our collective well-being.

Thankfully, even though noise pollution is also an unmet priority within the city's Environmental Plan, Toronto has initiated a number of green-based projects with positive noise-reduction results. Deep Lake Water Cooling, which is already in use in twenty-seven buildings across downtown Toronto, including Metro Hall and the Air Canada Centre, eliminates the mechanical noise associated with conventional cooling methods. Green roofs on commercial buildings like *NOW Magazine's*, public schools and single-family dwellings also help reduce noise pollution. The use of hybrid-energy buses and city fleets, which emit less sound, helps reduce traffic noise, as does cycling. The latter not only contributes to reductions in road-based ambient noise levels but also to reduced wear and tear on city streets, which in turn decreases the heavy sonic pollution of intermittent road construction.

While these green-based initiatives all make positive contributions, Toronto needs to change how it thinks about city sound. It must once again regain the progressive position it held in the seventies and push the boundaries of how Torontonians consider their urban acoustic ecology.

Hildegard Westerkamp, one of the original *WSP* founders and an internationally renowned soundscape composer, offers useful insights into how Toronto can realize a successful sound environment. She identifies three key examples of successful city soundscapes – the ravine parks, the Toronto Islands and Kensington Market – that provide a balance of calming, rejuvenating and energizing effects. Perhaps it best suits the city to study these areas for models and principles that could serve to enhance and preserve the interesting soundscapes of other enclaves. Since Toronto is a city of distinct yet interconnected neighbourhoods, it would be easy to proliferate these principles of good acoustic ecology, maximizing the creation of unique, hi-fi soundscapes. Within this interconnected network of interesting, energizing city sounds, Torontonians could travel attuned to their multicultural acoustic environments rather than under headphones to the playlists on their iPods.

Toronto has an excellent opportunity to act on other such audacious acoustic ideas through the Clean and Beautiful City program. As our acoustic ecologists remind us, for far too long Western society has thought of landscapes in strictly visual terms. Even Toronto's Music Garden is strictly a visual representation of music by Bach. Yet landscape, whether natural or urban, is a full sensory experience. Both the city and its design community need to bring this mode of thinking into their practice. It's no longer sufficient to create beautiful-looking spaces. Both sight and sound

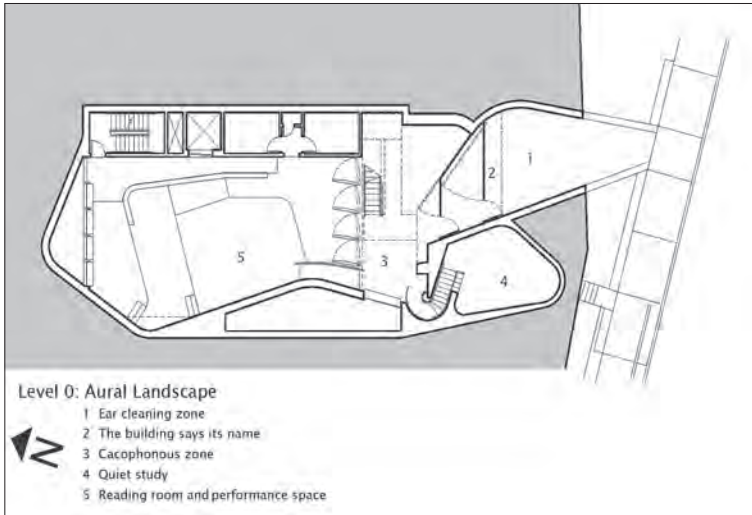


are the primary means by which humans connect to their environment, so why shouldn't we demand a visually and sonically beautiful city?

Thankfully, Toronto already has a pool of artists and architects who are concerned with the sonic properties of the built environment and who are working to develop new spaces that both look and sound interesting. One example of such a space is the Luminous Veil, a suicide-prevention barrier that runs along either side of the Prince Edward Viaduct and was created by architects Dereck Revington and Geoff Thün of Dereck Revington Studio. Inspired by a number of sources, including the Greek myth of Linos' death giving birth to music (which would not be lost on Schafer, who is highly influenced by myth), the end result is a public sculpture at the scale of landscape – a huge musical instrument of tuned steel strings arranged in mathematically derived yet naturally inspired rhythms, a lyre of Orpheus to wake the dead – intended to serve as a composition to be performed as much as to effectively prevent suicide. Walking the bridge, one becomes strangely aware of how the wind activates the Luminous Veil's low, reverberant hum, creating a calming effect against the brash noise of busy street traffic.

Another intriguing example of sound-sensitive design can be found in Kristi Allik and Rob Mulder's Skyharp, which has been installed in two different Toronto locations – first outside Roy Thomson Hall and then on Toronto Island. This sound sculpture interacts with its natural environment by fixating on the movement of a single tree, which serves as both instrument and performer. The designated 'performer' and its movements are monitored by a video camera. When the tree touches trigger points laid out in a set field, a collection of pre-recorded sounds are activated and filtered into the environment through a series of twenty invisible speakers. This sound field both alters and blends with the existing aural landscape, presenting a delicate but binding relationship between nature and its human inhabitants. Weather, the flight pattern of birds and other natural occurrences can affect the performance of Skyharp, creating a broader connection to variations in the soundscape over time. The end result is an enriched acoustic environment.

Perhaps the most comprehensive Toronto soundscape project is the proposed yet still unbuilt redevelopment of the Canadian Music Centre (CMC), the country's home for the music of its composers. Inspired by both Schafer's call for acoustic design and the desire to treat architecture as a full sensory experience, architects Paul Raff and Colin Ripley have created a sequence of public spaces that take sound as their primary design inspiration. According to Raff and Ripley, it is sound that connects us to space and to the presence of others and, thus, to both our sense of community and



Paul Raff and Colin Ripley's acoustic architecture.

our sense of self. Their redesign for the CMC opens with an ear-cleaning entrance, which leads to a wall of speakers that sonically introduce the centre to visitors. Once inside, a cacophonous community zone allows individuals to connect to the space and the building's occupants before they direct themselves on to the quiet listening rooms or the acoustically flexible gathering/performance space. Form, flow, structure and materials have all been selected to maximize the effect of this interconnected aural landscape, which will envelop visitors in interactive sound experiences.

Unfortunately, contemporary Toronto has come to tolerate increasingly dangerous levels of noise pollution as a necessary by-product of urban growth. This is despite its pioneering history and current, innovative opportunities for change. With new controls over architectural design, urban design and neighbourhood planning afforded through the provincial City of Toronto Act, what better time is there to show the world once again how progressive Toronto can be in developing the sound of the city? By re-envisioning the Clean and Beautiful City program and actualizing the imagination of an inspired design community, Toronto could take a bold step in a unique direction. It's simply insufficient to consider urban noise and its reduction when green technology and acoustic ecology have cleared the path towards creating great-sounding urban environments. By including acoustic design as part of environmentally sound urban affairs and city planning, Toronto can restore its place as a leading city soundscape.

Seana Irvine

## **Something so green, down in the valley**

Discovering the Don Valley Brick Works, nestled deep within the heart of Toronto's Don Valley ravine system, is like stumbling upon a whole new way of seeing our city. It is a powerful place, steeped in stories of how Toronto was explored, exploited and created. From the clay and shale that lies beneath our feet – the natural materials that retreating glaciers left in their path – over 43 million bricks were manufactured annually in the peak years after w w i i. These bricks, along with the sweat of generations of labourers, provided the materials that built landmark buildings such as Massey Hall and Old City Hall.

This site, which built the industrial city of the past, is now being transformed into a showcase for engaging people in creating the green city of the future. Evergreen, a national charitable organization dedicated to bringing nature back to our cities, has undertaken the challenge of restoring the Brick Works into a year-round, environmentally based community centre.

The palette for creating a truly unique experience lies within the geological, industrial and ecological richness of the site. Evergreen and its partners will animate the Brick Works with strong, family-focused environmental, arts, food and health programming. The North Slope, an internationally significant geological wall that shows three glacial formations dating back 150,000 years, will become a learning laboratory for understanding climate change. The magnificent kilns will become galleries for exploring the history and future of cities. The colourful native-plant nursery, Evergreen Gardens, and local producer-only food markets will offer tactile mediums for engaging our senses to their



fullest – sight, smell, taste, touch – and embolden us to become more actively engaged ecological citizens. A new Jamie Kennedy Foundation Restaurant will provide culinary education that focuses on what’s local and in season. Other food vendors with strong social and environmental mandates will fill the Marché with ecological and affordable treats. All of this will be wrapped within a green-design facility that demonstrates the highest levels of energy efficiency, water conservation and zero waste.

Ultimately, the transformation of the Don Valley Brick Works will connect Torontonians to the earth that lies beneath our feet, to each other and to the millions of threads that lie between.

Kerry Potts

## **Can you feel it? Finding the spirit of Toronto with the help of Aboriginal Torontonians**

In 2000, I was working at a local social service agency called Native Women's Resource Centre, coordinating a program for survivors of abuse. I invited a respected Iroquois Elder to share with the clients teachings about traditional medicines. In the midst of her talk, she began speaking of a prophecy that foresees Toronto immersed in water and warns people to begin preparations to leave the city. At the time, I thought, 'Good grief! As if recovery from severe emotional trauma wasn't enough to deal with.' Seven years later, after having worked in various sectors of the Aboriginal community of Toronto and having exposed myself to teachings from different Elders and cultures, I now realize there are volumes of traditionally grounded teachings that offer insights into how to prevent such a catastrophe. But rarely have I heard these teachings reflected within popular environmental discourses. In fact, I get the feeling that Aboriginal knowledge is not even on the radar of most Torontonians, and that they seldom wonder what they might be missing out on or how they might explore the ways such knowledge could resolve the city's environmental concerns.

Many mainstream paradigms look to scientific and technological innovation as the solution to our current environmental problems. Capitalism neatly fits into these models, demanding that we buy into the idea that greener living means greener consumption. We've watched the movie, bought the light bulbs and contemplated wearing hemp. Yet there's something deeper about this crisis that we're not looking at, and it's something I've learned from Aboriginal Elders here in Toronto: a psychic and spiritual rupture has occurred between ourselves and the earth. We seem to have forgotten about our dependency on and responsibilities to her. Though necessary, our technological advances and scientific

solutions are comparable to a prescription for Prozac: they make us feel better about life and adjust our chemical imbalances, but they don't always address the root of our trauma. This trauma is our disconnection from our mother, the earth.

As other contributors to this anthology will likely agree, modern cities must be retooled so their citizens will leave a smaller ecological footprint. To generate a long-range and holistic vision of how to shape Toronto's green future, I believe we must look to cultures whose traditions are grounded in a deep respect for the earth. Seeking out such knowledge, I spoke to three environmental activists from Toronto's Aboriginal community who have demonstrated a commitment to the integration of Aboriginal knowledge systems into urban environmental issues. In three separate interviews, I sat with Cree Elder and activist Pauline Shirt, Oneida Elder Grafton Antone and Anishnabe professor and researcher Deborah McGregor, asking them how to make Toronto a greener city. Each of the answers that Pauline, Grafton and Deb shared contained one common message: Aboriginal knowledge can offer solutions to creating a more sustainable city, and this knowledge can be found within Toronto.

### **Pauline Shirt, Cree Elder, Bloor/Danforth**

Originally from Saddle Lake Cree Nation, Pauline Shirt moved to Toronto in the sixties with very little money, a language barrier to overcome and four young children to care for. A few years later, thanks to the help of her friends and neighbours, Pauline created a vegetable garden in her backyard, then went on to help start several organic food co-operatives

in the city, including the Karma Co-op, which still operates in the Annex today. In 1974, Pauline began the Wandering Spirit Survival School to teach urban Aboriginal children about their cultures. Today, Wandering Spirit is a JK-to-8 school known as First Nations School.

At sixty-four, Pauline is still active in a number of environmental causes, including Don River regeneration and Rouge Valley preservation. She has told me that a goal of hers is to help 'reawaken the spirit of Toronto' to ensure the city has a sustainable future for many generations to come – and this is no David Foster can-you-feel-it type of spirit. As a medicine person, Pauline's approach to environmentalism, though pragmatic, includes an extensive level of engagement with the spiritual dimensions of life.

Pauline, like many Elders, has a tendency to speak in stories, personalizing her answers and relating them to her own experience. This style of responding presents the knowledge she shares as subjective instead of didactic or absolute. The layers of Pauline's answers allowed me to consider that the metaphysical dimensions of our environmental dilemmas may be as important as the physical ones.

What are some of the most important things people can do to live in a more environmentally friendly way?

When I first came to Toronto, I loved the beauty of the lakes. But when I walked by the shores, I saw the dead fish. I looked around in the woods and there were no wild berries and no animals. Even in the sixties, there was a lot of pollution. I walked all over the place and visited many areas around the city. I went to the Don Valley and I could see the carp, but the water was so polluted you couldn't eat them. Where I come from, how you survived was through fishing expeditions. Twenty or thirty families would go on fishing trips and we'd start with ceremonies, and the men smudged<sup>1</sup> their hearts and would pray. The women would cook and the children would help, and everyone would work as a community.

This is a turnaround time for the earth and we need to get back to the ways that allowed us to live off the land and understand her cycles. We need to tap into our spirits, our minds, our bodies and our hearts. We have to think holistically and communally. Within the dominant culture, we've forgotten that, and we are becoming spiritually bankrupt. Your spirit is the most important part, and your

<sup>1</sup> Smudging is a purification ceremony in which cedar, sage, sweetgrass and tobacco, or a combination of these, is burned and the smoke is passed over one's body.

body is the vessel that carries it. We've got to learn how to keep that vessel healthy, and keep that spirit healthy.

Is there anything specific Torontonians should be doing?

We have to learn to be independent. In Toronto, all four colours<sup>2</sup> are forgetting their original ways.

About three years ago, I spoke to a number of chiefs and I asked, 'If a natural disaster happened on your reserve, how would your people survive?' They said, 'Ah, we've got this funding.' I said, 'Never mind. If those things were wiped away, how would your people survive?' I talked to five or six chiefs and none of them had the answer. If I asked our mayor, he wouldn't have the answer either.

We've got to get away from this mindset of dependency. Few of us are farming or teaching people how to grow tobacco, vegetables, berries – things that allow us to be independent. There are no hunters or fishers. We don't communicate with the spirits of the fish or water. We need to walk alongside the water and see what's happening to it, bless it and give that respect.

What I would do as a Torontonian, and what I have been doing in Toronto, is having full-moon ceremonies<sup>3</sup> and offering tobacco to the rivers here, to the lake, and putting little fires of thought out to people to let them know the water needs their help.

When I got my fourth degree from the Midewewin<sup>4</sup> Lodge, I was taught how to speak to the spirit. We've got to learn how to pray and talk to the spirits in this city. I think people have forgotten that there is a spirit in everything they touch.

### **Grafton Antone, Oneida (Iroquois) Elder, St. Jamestown**

Grafton Antone is the Elder-in-residence at First Nations House, the Aboriginal students' centre at the University of Toronto. I first became aware of Grafton through his work organizing the Council Fire Native Cultural Centre's community garden project. Over the years, I've experienced several twenty-minute Thanksgiving addresses Grafton has given, all the while trying my best to remain reverent and block out encroaching thoughts

**2** This refers to the concept of the four colours or races of humankind – yellow, red, black and white – found within multiple Aboriginal belief systems. Each race carries particular gifts that maintain the balance of life.

**3** This is an Anishnabe women's ceremony that honours the connection that women have to the moon and the water. Anishnabe refers to Ojibway and Cree people in this context.

**4** Midewewin is the Grand Medicine Society of the Anishnabe people, who are dedicated spiritual and traditional knowledge practitioners. Members pass through various stages in their learning and practice, and in some societies, the fourth degree is the highest degree to pass through.



of the previous night's episode of *Top Model*. In such an address, each element of creation is given thanks, and many Elders close with the statement 'all my relations.' This statement means each human being is connected to all of creation, to the spirit world and to all those generations that came before them and will come after them. This holistic approach to our relationship to the earth is at the core of Aboriginal environmentalism. It prompts us to think about how individual actions can have a multiplicity of impacts and can resonate for generations to come. It also calls attention to the artificiality of the borders of today's cities and nations, and the ways in which actions that occur within Toronto resonate far beyond the GTA.

My interview with Grafton underscored how grassroots community action is necessary to effect change on any level, and how connecting people to land and to Aboriginal teachings may heal our relationships with the earth and with ourselves.

What projects have you been involved with in Toronto that relate to environmental protection?

I was raised on a small, self-sustaining farm, and we learned how to look after animals: the cows for milk, the horses for pulling ploughs and all the other animals that also contributed to the farming. I come from a family of eleven brothers and sisters, but we never wanted for anything.

If we fast-forward to 1995 in Toronto, I was with Council Fire, had sat on the elected band council in Oneida of the Thames and was a minister with the United Church. I would go to the centre and do blessings for feasts and other occasions. The executive director back then knew there was a need for the ceremonies I was doing, and the second year I was there she got us access to farmland near Newmarket. So we rented a tractor and ploughs and I took clients from the centre up there. We planted everything that goes in a garden and then brought Elders to give teachings and ceremonies.

The garden project was fantastic because it was so Anishnabe. It was ours. We changed the conditions that we saw ourselves in. By changing our thinking, by just putting new thoughts and ideas in people's heads, it made them change the way they were processing things. Teaching people about their traditions, their histories and about the land, it made them new.

If people work with the ground and get their hands in the soil, people heal. I can't put a value on it or measure its success rate, but I saw it in people.

If you sat down with Mayor David Miller, what would you say?

The City needs to be kinder to Aboriginal people. We need an Elder's office in City Hall to get our voice in there, so all of the discussion and ideas generated by the City aren't so, well, European. This will help us share what we know with Toronto. David Miller should also call a conference inviting the different Aboriginal nations into the region to deliver consultations. We need all of our nations talking together.

We also need to invite Elders to Toronto to have four seasons of Elder gatherings. Invite everyone to come and learn together as a community. I speak from the Iroquoian perspective and share the knowledge of living off the lands of my people. The Ojibway have those teachings about the animals out in the bush, and they have their own knowledge of that land. Then there are northern people, like the Cree, who know about the waterways and the animals up north. By doing this, it would also bring up a new generation of Elders who can teach these ways.

The consultations and the seasonal Elders' gatherings have to happen, because if they're not happening, then our people's spirits will go down. If our people's spirits are going down, then our city is going to be worse off for it, because Aboriginal people who follow the good way are environmentally conscious. In our Thanksgiving address, we give thanks for Mother Earth: we give thanks for the water, we give thanks for the animals, we give thanks for the medicines, and then we increase it to include the birds, the spirit of the thunders, the spirit of the wind. We thank the sun and the moon for their continuous work. That consciousness is in our teachings, and we need to share it with others.

**Deborah McGregor, professor and environmental consultant,  
North York**

Deb is Anishnabe (Ojibway) from Whitefish River First Nation, Birch Island. She holds a Master of Environmental Studies from York University and a Ph.D. from the University of Toronto's Faculty of Forestry. Deb

has worked with First Nations groups on environmental and community development issues for over fifteen years, and she is cross-appointed as an assistant professor in U of T's Geography and Aboriginal Studies departments.

Deb is currently conducting a research project in Toronto's urban Aboriginal community called *Minobimaatisiwin: Indigenous Knowledge, Sustainability and People in Toronto*. This research is partially in response to two misconceptions about Indigenous knowledge and the urban Aboriginal context: that urban Aboriginal people are less Native than rural or reserve Indians, and therefore are less connected to the environment, and that Indigenous knowledge does not exist in urban contexts. Deb's research is helping to dispel these myths and to affirm that Indigenous knowledge does exist in an urban setting and is being applied by Aboriginal people living in Toronto.

What barriers are preventing Torontonians from living in an environmentally friendly way?

Its world view and values. People just want to acquire stuff. In Toronto, people don't really need to have an SUV; you can ride your bike or take the TTC. High-definition televisions take a lot of energy, but people 'need' to have them. Not everyone is like this, but many people in the city have this consumer attitude that prevents them from thinking about the larger context of their actions. For example, Aboriginal people in Toronto were outraged by the purchasing of the landfill site near Oneida of the Thames, but they still keep making choices that produce more garbage.

Do you think this consumer attitude is different outside of the city?

The difference is that in the city you don't see the consequences as vividly. In Toronto, you'd likely never drink out of Lake Ontario or eat the fish. In more remote and rural communities, you would be relying on that water and would see the immediate impact of your actions.

I also see that people on reserves are consumer-driven. The world view is very similar to that in the city, so they are facing similar problems, like waste management and poor drinking water.

Can you describe some key ways that Aboriginal approaches to environmentalism differ from mainstream approaches?

I was working with the Six Nations of the Grand River on source-water protection. The fix that was prescribed by both the federal and provincial governments was very technical. However, the people in the community stated time and time again that the problem stems from moving away from our identities and values as Aboriginal people. If we don't take care of the water according to our traditional knowledge, then we won't solve the issue in a long-term way. The problem is that many of our people are not honouring and enacting the traditional values of respect and responsibility for the land.

The link with the spiritual aspect of human interactions with the earth is missing from mainstream understandings of environmental issues. Aboriginal people express their environmental responsibilities through ceremonies. For example, Josephine Mandamin has walked around the Great Lakes<sup>5</sup> to remind us of our spiritual connection to water. This year she is walking around Lake Erie. She says that, first thing every morning, we should drink a glass of water to remind ourselves how precious it is and to give thanks.

What do you think we could do to make a greener city?

The City needs to include traditional knowledge in its environmental planning. In public policy off-reserve, it's already included. For example, traditional knowledge is included in environmental recovery plans for species at risk. We don't have recognition of traditional knowledge in the city at all, but there are Aboriginal people who can provide this, and provide different approaches to making our city environmentally sustainable.

Elders and Aboriginal community leaders need to lead by example. There are Aboriginal social service organizations that own their buildings and are considering green rooftops. We could support things like a community garden and get involved with other environmental initiatives in the city.

We need to walk the talk. We can't be saying, 'Use our Indigenous knowledge,' and clobber people over the head with that message, then not practice it ourselves.

<sup>5</sup> See [www.motherearthwaterwalk.com](http://www.motherearthwaterwalk.com).

How would you advise Torontonians to lead greener lives?

Most people don't reflect on what they're doing each day, and the wider implication of their singular action. When I drive my car, it affects polar bears in the north and impacts the Inuit people who have to deal with dangerous conditions while fishing and hunting, due to ice breakup.

I think it's every day, waking up and having something like that drink of water and recognizing that what we have is actually something very precious, and being thankful.

Interviewing Pauline, Grafton and Deb allowed me a small glimpse into the unique experiences, teachings and values that shape Aboriginal knowledge as it relates to the environment. I won't make a sweeping statement swearing that at no other time is it more important to listen to Aboriginal people than now – it has always been important to do so. However, we're at a juncture where there's a desperate need for a diversity of voices to share knowledge about how to heal our relationship to our common mother, the earth.

The City of Toronto is also at a crucial stage in relationship-building with Aboriginal people. Aboriginal claims are being made that include land within the city's boundaries, and Toronto's boundaries are encroaching on other Aboriginal territories by way of air pollution, energy demands and landfills. Because Aboriginal concerns are frequently connected to the land and environment, the relationship that's established by the City to the Aboriginal community may help measure the integrity of the City's commitment to building a greener Toronto. This relationship will also shape whether or not Aboriginal knowledge will be shared, heeded and ultimately integrated into the City's green action plans. If there is no relationship between the people who make decisions at the municipal level and the Aboriginal knowledge-keepers, there will be no meaningful dialogue.

As Pauline reminds us, all races of people are forgetting their original teachings. As custodians of the earth, people must shift their personal and collective values and begin, as Deb said, to walk the talk. This point was underscored flawlessly for me as my interview with Grafton came to a close. I knew Grafton had a meeting uptown, so I asked him if I could give him a drive. 'No, that's all right. I like to walk, you know?' he answered. (Insert sound of hand smacking forehead.)



Jacob Allderdice

## **Life at the speed of a bicycle**

Whatever we do to paint Toronto green, we'll always struggle with congested, contested streets and the meaning of crowds in the city. The fact is, however we greenwash them, streets aren't going away. Cars grow more numerous every year. It's good news that they're becoming greener. But it's the space they require and the speeds they can reach that make them incompatible with humans.

But, hey, don't humans like crowded, busy places that are full of life? Why do people stroll along the Danforth west of Pape, where walking space is squeezed between parked cars and sidewalk cafés, and the air is thick with the smell not only of souvlaki, but of car emissions as well? Look how drivers relax and accept their fate in this stretch of bicycle-speed, one-lane crawl, an arm draped out the window, passengers relaxed, everyone easy, soaking in the scene. Meanwhile, on the sidewalk, pedestrians – families with children, single men walking in groups, elderly women in a passel, couples young and old – stroll, pause and, with remarkable frequency and complete unconcern for danger, cross the street mid-block to some attraction on the other side. Danger?

What danger? Only to cyclists, at the speed of a bicycle, in the 2-metre gap: watch out for doors!

This is what a 'living street,' a green street, should aim for, this thickness of programming so jammed together it's possible to jaywalk without a care.

Ivan Illich wrote in 1973: 'Free people must travel the road to productive social relations at the speed of a bicycle.'<sup>1</sup> Folks who don't understand this should take a careful look at the stretch of Danforth between Pape and Broadview. With busy, crowded sidewalks, small storefronts below apartments, parking on two sides, a wide, painted median for left turns and pedestrian safety, and just two lanes of through traffic, it offers a worthy meme. Planners: let's make more streets like this piece of the Danforth, where pedestrians, cyclists and motorists peacefully coexist in a high-density area.

In high-density neighbourhoods where driving is the least desirable option and walking is easy, the city's green aspirations could one day be more than just greenwash.

<sup>1</sup> 'Energy and Equity' by Ivan Illich. First published 1973 in *Le Monde*: [reactor-core.org/energy-and-equity.html](http://reactor-core.org/energy-and-equity.html).



Toronto's garbage bins are overflowing with coffee cups.

Most takeout coffee cups can be recycled or green-binned, says the City of Toronto's official green-bin guide. And yet, Toronto's latest garbage audit found that a large percentage of our trash is from fast-food restaurants and coffee shops. In 303 of the 572 bins examined, Tim Hortons was the biggest contributor to the heap.<sup>1</sup>

According to Agriculture and Agri-Food Canada, Canadians consume 7 billion cups of tea and 15 billion cups of coffee per year. Starbucks alone sold 2.6 billion cups of coffee in Canada in 2006.<sup>2</sup> Each of those comes with a lid and a stir stick. Most of those end up in landfill sites.

A study by the Dutch environment ministry claims that a Styrofoam cup has to be used fifty-seven times for it to be energy-efficient relative to a glass or porcelain cup, despite the water and energy used to clean a reusable cup.<sup>3</sup> The amount of landfill that disposable cups create tips this comparison even further in favour of reusable options.

Even though a paper cup is considered biodegradable, it still takes five to fifteen years to break down; Styrofoam takes fifty to a hundred years. Not only that, but fifty-seven chemicals have been identified as by-products in the production of Styrofoam, creating liquid

<sup>1</sup> Toronto Waste Audit Report in *Toronto Star*, April 5, 2007. ([www.thestar.com/News/article/199445](http://www.thestar.com/News/article/199445)).

<sup>2</sup> [www.starbucks.com](http://www.starbucks.com)

<sup>3</sup> <http://64.233.167.104/search?q=cache:SVBcYIMFWqgJ:www.humboldt.edu/~envecon/ppt/econ309sustprodcon+Styrofoam+cups+vs.+vs.+paper+cups+vs.+reusable+mugs.+Dutch+Environment&hl=en&ct=c&cd=1&gl=ca>

and solid waste and polluting the air.<sup>4</sup> The styrene is also guilty of migrating to your coffee and has been linked to several health problems. In fact, styrene is now classified as a possible carcinogen. Paper isn't innocent either: the production of a single paper cup takes 1.8 grams of chemicals (including chloride, sodium, hydroxide, bleach, sulphuric acid and limestone), 33 grams of wood and 4.1 grams of petroleum.<sup>5</sup> In addition, the paper cups used at many coffee shops are lined with a low-density polyethylene, which renders them non-recyclable in many places.<sup>6</sup>

The Second Cup near my home claims it goes through an average of 5,000 paper coffee cups per week.<sup>7</sup> That's 260,000 cups per year from one location – and that doesn't include the plastic cups used for cold drinks. Second Cup has over 360 locations in Canada. That's 93.6 million cups in a year just from Second Cup, which claims to use the same in plastic lids and about 4,000 stir sticks per week. If one person every day brought a reusable cup to each Second Cup location, that would be 131,400 fewer cups and 131,400 fewer lids that end up in the landfill every year.

The solution is simple: bring your own mug or ask for a reusable one. Choose machines, shops and cups that are green. Next time you need your morning coffee fix, make sure it's a green fix as well.

**4** [www.earthresource.org/campaigns/capp/capp-styrofoam.html](http://www.earthresource.org/campaigns/capp/capp-styrofoam.html)

**5** RCS Advancing Chemical Sciences, [www.chemsoc.org/networks/LearnNet/inspirational/resources/6.2.2.pdf](http://www.chemsoc.org/networks/LearnNet/inspirational/resources/6.2.2.pdf).

**6** Starbucks annual report found at [www.starbucks.com](http://www.starbucks.com).

**7** Interview with manager and owner, Second Cup, Lawrence Plaza.

Eduardo Sousa

## **The water commons: Moving from watershed management to watershed consciousness in Toronto**

When you live in a highly urbanized city like Toronto, littered as it is with paved roads, scattered parks and an increasingly built-up environment, you typically give very little thought to the fact that you live in a watershed. When you walk downtown on a hot, smoggy summer day, you're probably thinking about the quality of the air you're breathing. On a brisk winter day, you might be thinking about getting inside as quickly as possible, or about navigating the banks of snow left over by the snowplows. Likely, though, you're not thinking about where your feet are, and about the streams and rivers – now long gone, yet still all part of a watershed – that are buried under the pavement.

The concept of the watershed is a fairly recent one. It was first used in English scientific language in the early 1800s to refer to the actual ridge of land (also known as a divide) that separates areas whose waters drain into a receiving body like a river or lake. In North America, however, the word has come to mean not only the dividing line between basins, but also the basin itself.

For example, if you live around Eglinton Avenue and Jane Street, you're in the Humber River Watershed. Danforth and Broadview? Welcome to the Don River Watershed. If you head out to the Scarborough Town Centre, you're in the Rouge River Watershed. And back downtown, if you're on the corner of Queen East and Parliament, you're in the historic Taddle Creek Watershed. The largest watershed we inhabit in the region is, of course, the Great Lakes Watershed. We're blessed to live in a region – embraced by the Oak Ridges Moraine to the east and north, the Niagara Escarpment to the west and Lake Ontario to the south – that is made up of a network of freshwater rivers and streams that empty into one of the largest freshwater bodies on the continent:

Lake Ontario. The Oak Ridges Moraine Watershed consists of many watersheds that, both in terms of surface and groundwater, make up the water commons for our region.

The *commons* is an older term, rooted in England and Wales, that is traditionally associated with land held ‘in common’ by a community ascribed a set of rights that allowed individuals to use the land for communal activities such as cattle and sheep grazing. It is a limited cultural and economic term that today has recently been expanded by civil society organizations like the Alliance for Democracy to mean ‘all the aspects of nature and culture that we inherit jointly and freely and hold in trust for future generations.’<sup>1</sup>

One special aspect of nature and culture we’ve inherited in Toronto is that of the ‘water commons.’ In their 2002 book *Blue Gold: The Battle Against the Corporate Theft of the World’s Water* (Stoddart), water activists Maude Barlow and Tony Clarke wrote of the water commons as ‘water that must be declared and understood for all time to be common property.’ And ‘common property’ here is intended to mean something that is essentially shared by all and owned by none.

To understand and value the water commons, it’s important to be conscious of the central importance of water in our lives, an importance that is rooted in place, and in the context of this discussion, rooted in a watershed. Watershed consciousness is crucial not only to the understanding of the water commons: it is a precondition for the protection and sustainability of our water supplies. If watershed management were always undertaken with a deeply felt understanding of the water commons, we might have a better chance at protecting, sustaining

<sup>1</sup> [www.tapestryofthecommons.org/commons/commons\\_main.html](http://www.tapestryofthecommons.org/commons/commons_main.html).



Taddle Creek, all piped up and flowing as part of Toronto's original sewer system.

and re-envisioning what it means to live in the city in an ecologically sound manner.

### **Bury me a river, forget me not**

Had there been watershed consciousness amongst early European settlers and the subsequent generations that shaped the city, we would not have lost all the rivers and streams that have been buried in the name of 'developing' Toronto. If you look at an aerial photo of the city today, you'll see a huge swath of land between the Humber and Don rivers occupied by the built landscape. Had we had aerial photography 200 years ago, those photographs would have shown many streams running through them, all the way down to Lake Ontario. Garrison Creek, which used to start north of St. Clair Avenue and flow all the way down to Toronto Bay, is now known mostly through its visible remnant ravine system, made up of Christie Pits, Bickford Park and Trinity Bellwoods. Taddle Creek is hardly visible at all in the lay of the land, making a rare ripple at U of T's Philosopher's Walk and at the pond at Wychwood Park. Squeezed between the Garrison and Taddle watersheds lay Russell Creek and its watershed, out of which developed Kensington Market and on top of which you will now find Metro Hall and the Toronto International Film Festival's Festival Centre.

Taddle Creek, Garrison Creek, Russell Creek and other long-buried creeks share the indignity of having been transformed into sewers. Unplanned and unmitigated urban development drained these creeks of vitality both in terms of water and sheer physical existence, and all because the creeks were inconveniently in the way. Because the early city had no sewer infrastructure, and because of a predominantly utilitarian view of nature that dictated that there was no room for it in the city, those pesky creeks were buried – out of sight, out of mind. Had there been an awareness of the water commons back then, perhaps we would see these creeks flowing through the downtown core today.

The presence of these creeks is sorely missed, not only for their aesthetic contributions, but also for the habitat they provided and the opportunity to connect with nature and the natural processes they created. If these creeks had been left to flow naturally, their watersheds would have developed quite differently, and we would live in a very different type of city today. It could be argued that Kensington Market and all the recreational activities of Christie Pits and Trinity Bellwoods Park would not exist. Perhaps a different cultural landscape that was more entwined with the natural environment would have developed, giving rise to a healthier, more ecologically rooted city.





Taddle Creek was dammed to create McCaul's Pond on the University of Toronto campus. Hart House's Great Hall now sits on top of the pond.

### **Fostering watershed consciousness in Toronto**

The loss of natural waterways and habitats over the centuries has reinforced the central notion of watershed consciousness, which is that water must be valued in a completely non-utilitarian way. There is no room to treat watercourses as things that are in the way of economic growth and development. There are various ways of fostering watershed consciousness and engendering an awareness of the water commons, especially in an era of climate change, with its inevitable impact on water quantity and quality.

#### **A. WATER COMMONS CHARTER FOR TORONTO'S WATERSHEDS**

Watershed-based grassroots organizations such as the Task Force to Bring Back the Don, as well as the Toronto Conservation Authority, the City of Toronto, other municipalities in the Oak Ridges Moraine Watershed and other levels of government, should all adopt the following set of guiding principles and values (as noted in Barlow and Clarke's *Blue Gold*) in their watershed planning, management and restoration efforts:



Garrison Creek, once a mighty flowing creek that cut across the city, being cut off from its watershed and encased in a straightjacket of brick and lime.

- 1** Water belongs to the earth and to all species.
- 2** Water should be left where it is whenever possible.
- 3** Water must be conserved for all time.
- 4** Polluted water must be reclaimed.
- 5** Water is best protected in natural watersheds.
- 6** Water is a public trust to be guarded by all levels of government.
- 7** Access to an adequate supply of clean water is a basic human right.
- 8** The best advocates for water are local communities and citizens.
- 9** The public must participate as an equal partner with government to protect water.
- 10** Economic globalization polices are not water-sustainable.

These principles should be the filter through which existing initiatives, such as the Remedial Action Plan to clean up toxic hot spots like Toronto



Harbour and the Wet Weather Flow Master Plan to manage stormwater and sanitary flows, should pass.

## **B. FOUR STREAMS FOR CREATING AND SUSTAINING A WATER COMMONS FOR TORONTO WATERSHEDS**

At both the individual and institutional levels, we need to undertake the following actions:

### **1. EDUCATE FOR WATERSHEDS**

There ought to be modules in key grades at the primary, elementary and secondary levels that teach kids where their water comes from and where it goes. These modules could incorporate local community history from both a social and environmental perspective. At higher levels, students should be encouraged to become involved in water-restoration projects and community initiatives that continue the movement towards the regeneration of watershed functions in the city.

### **2. ADVOCATE AND MOBILIZE FOR WATERSHEDS**

Bolivian activist Oscar Olivera fought in his country's water wars and taught the citizens of that country that civil society should be just as transparent and flowing as water. Every watershed should have a council of citizen advocates. The Don and Humber already have forms of watershed councils that have been doing good work, but I'm suggesting a citizen-led body with staff and technical expertise that would think creatively and operate according to the aforementioned charter. These councils would be guided by some of the principal characteristics of water that Olivera refers to – namely transparency and movement – and would act as stewards for their rivers, creeks and indeed the watershed.

Watershed councils could be instrumental in moving Toronto to a deep shade of green. Working closely with City Council and a watershed-aware bureaucracy, they could develop and enforce various water-friendly policies such as mandatory green roofs on all new buildings; the retrofitting of existing residential and commercial buildings; the installation of community-based 'living machines,' natural systems of waste-water treatment, in neighbourhoods, schoolyards and parks, that would allow for a disconnection from, or less reliance on, the city's aging infrastructure of pipes; the use of porous construction materials for roads and sidewalks; and the use of rain barrels and cisterns to redirect roof runoff. These ideas are not radical – some of them have been bandied about for years and have inspired many to think of a different form of city. But, delivered as a watershed-based program, they might help us move beyond the status

quo, where we inhabit sewersheds rather than watersheds, and they might inspire us to recreate the ecological functions that healthy watersheds once provided. Having healthy, ecologically functioning watersheds in an urban context will not only help us to better cope with a world of climate change, it would encourage future generations of Torontonians to develop a deeper appreciation of the implicit centrality of water in their lives and in society. The cycle (or spiral) would be continued – from watersheds to sewersheds to watersheds embraced as the water commons.

Currently, the City designates the area between the Don and Humber watersheds as ‘combined sewer area.’ It’s true that area, once a series of healthy watersheds (Taddle, Russell, Garrison), is now a collective sewershed. These creeks suffered the indignity of becoming sewers from the get-go – the City should at the very least recognize the historic existence of these creeks by referring to them as a ‘historic watersheds region,’ or even better, by restoring their historic names. Accordingly, each should have its own council as well. Perhaps the former citizen-led Garrison Creek Steering Committee and the Taddle Creek Watershed Initiative could be revived to become the core groups for these watershed-based council bodies.

### 3. GOVERN FOR WATERSHEDS

A significant move towards watershed consciousness can occur only if our structures of governance and democracy shift towards representation based on watershed boundaries rather than on arbitrary political delineations. Councillors should represent their constituents on the basis of both population and watersheds. This shift would guarantee a number of councillors representing the Rouge River Watershed, Don River Watershed, the historic streams watersheds and so on.

Councillors should also sit on their respective watershed councils. Although this may be idealistic, it has been happening to some extent in parishes in the eastern U.S., which have aligned themselves along watershed boundaries. True to watershed consciousness, those in a position to govern would do so on the basis of integrity and a desire to act in the public interest and in the interest of the watershed. Gone would be the days when Toronto annually dumped more than 9 billion litres of raw sewage into Lake Ontario.<sup>2</sup>

### 4. CELEBRATE WATERSHEDS

We do not sufficiently celebrate water and the land through which it flows. To celebrate watersheds means to celebrate life. There should be fountains, flow forms and

<sup>2</sup> *Toronto Star*, ‘New rules won’t keep sewage out of lakes.’ July 9, 2007, A18.

other forms of public art that celebrate water in our lives and in the city. There should be a day to celebrate each watershed. We should acknowledge the rich diversity of countries represented by all the citizens of this city, and such a celebration should include water rituals from different cultures and different religions and spiritualities from around the world. Recognizing March 22, World Water Day, at the various community civic centres and at City Hall would be a terrific way to begin to do this.

### **In the end, in the beginning ...**

Watershed consciousness is more than just cleaning up a creek or river of tires and detritus, important as that is. It is more than planting native plant and tree species in ravines, crucial as that is. It is more than holding design charettes to bring back buried creeks or revitalizing the waterfront, needed as those activities are. These are all signs of a potential bubbling-up of watershed consciousness. But central to watershed consciousness is a way of being, a way of living that places water, and thus nature, at the centre of our lives.

For several years, I worked for Toronto Parks and coordinated the Taddle Creek Watershed Initiative in the hopes of 'bringing back' Taddle Creek. At first, this meant trying to bring the creek to surface where feasible, but the challenges of daylighting a very polluted creek in a highly built-up part of the city (the creek flows under Mount Sinai Hospital and the Eaton Centre) characterized by a dearth of major parks and large open spaces proved difficult to overcome. As a result, the group shifted gears and tried to work with the idea of the creek. We helped the community of Wychwood Park restore their pond (the only place where, arguably, you can still see the Taddle above ground) to some semblance of ecological health. We created natural habitat by planting native trees and plants in opportune places along the historic course of the creek. We helped establish a community garden at Moss Park near the spot where a market garden existed when the Taddle and Moss Park creeks flowed and merged. And then there were the public walks along the creek's historic course: teaching about water in the city, where it comes from, where it goes; telling stories, reading poetry; showing photos of what the land looked like; walking the creek; remembering it, reclaiming it – in the process, inspiring what could yet be, essentially engendering watershed consciousness and helping to restore the water commons for current and future generations.

What would Toronto look like if water were central to its existence – if in all policy decisions made in council, in all decisions made for the sake of the local economy, water (and, it follows, nature) were not externalized,

but rather central? What if, in the process of this developing consciousness, watersheds that turned to sewersheds could once again function as watersheds? What would Toronto look like if we all shared a collective watershed consciousness? Asking such questions opens us up to the possibilities of not just a green uTOpia but a green and blue uTOpia.

What comes to my mind is a lush oasis of hamlets, each with its communal water-treatment facilities and individual means of capturing and using water, with community gardens everywhere you look and local streams running above ground again, free from their piped-up, imprisoned existence. A city where an awareness and love of water motivates every step.

#### INSPIRATION

These musings come as a result of many years of working on water issues from the international to the national - as well as from the regional to the local - levels. Accordingly, I must thank those thinkers and activists who have greatly inspired me over the years: Maude Barlow, who clearly and passionately advocates for the rights of water and rights to water; Susan Richardson, former Parks Director, and Murray Boyce, former Parks Manager, who believed in the work of intertwining culture and nature in the city; Helen Mills, urban ecologist, for her work and passion for lost creeks, and for helping me to see the city differently; James Brown and Kim Storey, architects whose visions for Garrison Creek greatly inspired me; and Michael Hough, designer and urban ecological visionary who taught me that the city is not bereft of nature or natural processes.