13 Socio-Ecological Change in the Nineteenth and Twenty-first Centuries: The Lower Don River

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On 2 February 2007, Waterfront Toronto, the city's lead waterfront development corporation, announced an international design competition intended to secure a world-class plan for developing forty hectares of land at the mouth of the Don River. The task given to firms selected for the competition was an ambitious one: they were to envision the 're-naturalizing' and revitalization of an area that has been marginalized for years. Waterfront Toronto had called for a plan for the Lower Don Lands that would establish a 'common vision for this area' and would construct an 'iconic landscape' to bring new urban life to the area (Waterfront Toronto 2007a: 7).[1] The initiative of Waterfront Toronto to reinvent the mouth of the Don River marks a major reversal in changes to the Don that began in the late nineteenth century. It is part of an ongoing process aimed at re-imagining, reconfiguring, and reshaping a problematic area of the waterfront.

It is particularly appropriate that the final chapter in this volume focuses on a comparison between contemporary plans for 're-naturalization' of the Don River and the changes made to the river in the late nineteenth century. The volume begins with chapters that discuss the ways Toronto's waterfront was transformed in conjunction with an industrially oriented era of development and ends with discussions of the more recent wave of development. This chapter uses the particular case of the Don River to compare the ways that socio-ecological changes in the two periods were similar and different. Late-nineteenth-century city builders constructed plans for the Don that spoke ambivalently of nature both as exalted and outside the bounds of human control, but also as requiring improvement as the key to unlocking its productive capacity in support of urban growth. In contrast, contemporary plans

for transforming the Don use language and images that emphasize sustainability, recognize the importance of promoting and maintaining healthy urban ecosystems, and expound ecological modernization's 'win-win' solutions for both the economy and the environment (for more on ecological modernization see Desfor and Keil 2004; Gibbs 2000; Hajer 1995). The socio-ecological transformations of the Don differ dramatically in their form – the first a straightening and encapsulation of the river; the more recent an attempt at re-naturalizing, or 'undoing' the effects of those earlier alterations. They share similarities, however, in that they were both produced by and helped produce processes that linked nature with urbanization.

The late-nineteenth-century project of straightening the Don was primarily linked, we suggest, with industrialization of the city. In contrast, the more recent plans for re-naturalization were established by and support a knowledge-based economic mode of development. By the mid- and late twentieth century, as global economic restructuring was taking hold, industry moved out of or closed down on the central waterfront and left behind landscapes of little consequence for Toronto's emerging economy. The 'industrialized' Don needed reinvention to be relevant for a new urban-space economy. Waterfront Toronto's initiatives for the Lower Don Lands, and in particular for the Don River, are essential aspects of this reinvention process.

The winner of Waterfront Toronto's international design competition was a consortium headed by Michael Van Valkenburgh, professor of landscape architecture at the Harvard Graduate School of Design. The interdisciplinary planning team used what it called ecological and sustainable strategies to 're-integrate strategically important post-industrial landscapes while reframing their interactions with the natural environment' (American Society of Landscape Architects 2008). The Michael Van Valkenburgh & Associates (MVVA) proposal has won a number of prizes that commend it not only for its urban design but also for articulating new relationships between nature and urban development. The American Society of Landscape Architects presented it with its 2008 Award of Honor, celebrating the way it 'heralds a new relationship between the urban and the natural' and praising the plan for its reinvention of the Don River 'as an agent of urbanism' (ibid.). The plan also received the Best Futuristic Design Award at the 2009 Building Exchange Conference in Hamburg, Germany, where an international panel noted its contribution to sustainability, efficiency, and 'collaboration with the built environment' (CNW 2009).

13.1 'Urban Estuary,' from plan for Lower Don Valley by Michael Van Volkenburg and Associates, 2010. (Courtesy of Waterfront Toronto)

Central to the MVVA proposal is the creation of a new type of territory – an 'urban estuary.' According to the plan (see figure 13.1), this new territory is to be constructed so that 'the city, lake and river interact in a dynamic and balanced relationship,' becoming 'a place of exchange, where urban and natural systems intermingle' (2007: 42). The MVVA's urban estuary extends the conventional geologic definition of an estuary as a partly enclosed coastal body of water into which flow one or more rivers or streams. The urban estuary becomes a metaphor for the coming together of two disparate systems – the urban and the natural – which overlap and interact with each other but maintain their distinct identities. We, however, prefer a conceptualization of 'urban' and 'natural' in which they are not seen to be in opposition, as though they are separate worlds. Rather, 'urban' and 'natural' are fused together as a dense network of interwoven human, biophysical, cultural, discursive, spatial, and, of course, material processes (Swyngedouw 2004). In

this conceptualization, David Harvey's contention that there is nothing especially unnatural about New York City (1996a) becomes clear. We suggest that MVVA's proposed urban estuary should be understood as a hybrid landscape, or what Swyngedouw calls 'socio-nature' (1996: 68). For us, socio-nature is a concept that indicates a deep intertwining of biophysical and societal networks that are effectively inseparable.

Socio-natures and Urbanization

In this section, we briefly explore relationships between socio-natures and urbanization. By this we mean our interest in both societal relationships *with* nature, as well as societal transformations *of* 'nature' into commodities, infrastructure, and urban form itself.

Cities have been the centres of civilization and modernization for centuries. 'Modern' urban planners, engineers, politicians, and other place entrepreneurs (Molotch 1976) have consistently had prominent positions in discursive and material processes involved with the transformation of cities (see Moir, chapter 1, this volume). And city builders subscribing to modernity's principles have taken their cues from the virtues of civilization that stress reason, progress, and profitability. In the Western world, modernity's approach to urbanization has been largely based on the notion that progress could be achieved through the logic of the Enlightenment and scientific procedures (see, for example, Kaika 2005; Harvey 1996a). The Enlightenment rests on an ideology wherein the logic of scientific experimentation leads to new knowledge about a nature that is largely divorced from human systems. With such knowledge, society is able to dominate this external nature through control and manipulation (Leiss 1974). Plans for the design, use, and signification of cities have drawn on this ideological frame, envisioning societal institutions and organizations that have an ability to transform nature into new urban spaces. But the transformation of nature into urban spaces has been based on partial or imperfect knowledge of a complex array of biophysical and social processes – that is, knowledge of both the purportedly distinct biophysical and social processes and the interrelationships between these worlds is fragmentary and, in important instances, oversimplified. In such cases, the production of new socio-natures has tended to lead to many unpredictable results and unintended consequences. Though modernity portrays a rationalized, predictable, and controllable nature, history is replete with examples of catastrophes resulting from city building predicated on human domination of a well-behaved nature.

The last few decades have witnessed the emergence of a substantial political ecology literature that has revisited modernist approaches to an external nature (Davis 2001; Herzogenrath 2001; Wallerstein 2000; Cronon 1996; Harvey 1996a). Fundamental to this multidisciplinary literature is a rejection of the centuries-old divide that left nature and society as distinct entities. At the urban level, this literature has tended to focus on both conceptual and empirical analyses of the production of urban environments that situate the particularities of change within a broader context of critical social theory (see Keil 2005, 2003). These approaches conceptualize biophysical and social processes within a tightly woven network through which urban spaces are shaped. For example, Heynen et al. note that the 'environment combines socio-physical constructions that are actively and historically produced, both in terms of social content and physical-environmental qualities' (2006: 11). A central aspect of the 'social content' necessary for the production of built environments is political decision making. Consequently, the unravelling of political processes embedded within 'the construction of socio-physical constructions' is central to understanding urban change.

Matthew Gandy's work is at the forefront of this urban-oriented political ecology literature, and his analyses have helped inform our conceptualization of the roles of socio-nature in urbanization processes. His work on infrastructure development in New York City (2002) emphasizes both the material and ideological bases for nature–society relations in city building, arguing that society manipulates biophysical nature as a precondition for urban life. Gandy's exploration of water as it flows through urban spaces highlights the multiple and complex roles that socio-nature plays in city building. 'Nature is built into the fabric of the city,' he writes, 'not just as a material element in urban space, but also as a commodity that is integral to the abstract dynamics of capital accumulation' (2004: 1025). For Gandy, 'metropolitan natures' – water systems, highways, parks – are produced not only through networks that bring together raw materials from far-off places, but also through ideologies that support city life. Such metropolitan natures – or, in our terms, socio-natures – provide a concrete conceptualization of the ways that cities are produced through integrated and largely inseparable forms of human and non-human natures at various scales.

In our historical comparison of socio-ecological change along the Don River, socio-natures influence urban growth or decline in four specific ways. First, they underpin urban growth or decline as imbricated components of physical form; second, they are centrally involved with ongoing biophysical processes, such as, in our case, flooding and silta-

tion; third, they are a key aspect of political processes that influence the conditions and institutions of urban-development policy formation; and, fourth, they alter spatial relations in the city – by, for example, making some areas more desirable, and consequently marketable, as accessibility is increased to 'nature,' employment centres, recreational spaces, and 'healthy ecological systems.'

The Don Improvement Project, 1886–1891

By the 1870s the Lower Don River had become befouled by municipal and industrial wastes and was widely recognized as a menace to public health. Years of waste and sewage disposal by local industries and municipal authorities, combined with changes in the river's hydrology caused by deforestation, soil erosion, and water diversion for agricultural and industrial purposes, contributed to highly polluted conditions in the slow-moving, serpentine reaches of the lower river and the massive reach of marshlands at its mouth. As one area resident commented in a letter to the daily *Globe* in 1874, 'The water and marsh [at the mouth] of the Don continues to be filled with a foul combination of [wastes] … so that whenever the wind sets to a particular quarter, and agitates the water, the result is [an] abominable smell … injurious to the comfort [and] the health of all within its reach' (*Globe* 1874: 2). From the perspective of ship captains and harbour officials, even more significant than the problem of filth and disease was the costly and pernicious problem of siltation. Each spring, harbour-minding officials cursed the river for depositing large quantities of silt and detritus in Toronto Harbour, creating hazards for shipping traffic (Eads 1882; Tully 1872). Damage to property caused by seasonal flooding presented yet another complaint that area landowners and civic representatives directed at the river.

In response to these problematic 'natural' processes, civic politicians sought to alter the river and thereby produce a new form of socio-nature that would serve the city's urbanization interests. They forwarded a plan in the early 1880s to 'widen, deepen, and straighten' the Lower Don River in accordance with four central objectives: (1) to improve the sanitary condition of the area; (2) to make the Don a navigable stream for large vessels; (3) to accommodate rail traffic into the City; and (4) to create new lands for industrial purposes (City of Toronto 1889).

For residents of Toronto's east end, the idea of the improvement project conjured images of prosperity and revitalization for an area that

had long been relegated to the margins of the city. Throughout the early 1880s, they petitioned council to take action to implement this ambitious river-improvement scheme. At a public meeting to discuss the project in October 1881, for example, landowner J.P. Doel 'pleaded on behalf of the health of the neighbourhood and city for the straightening and deepening of the Don,' imagining a future where the Don would become 'the great shipping centre for Toronto' (*Globe* 1881a: 7). Alderman Thomas Davies, who owned a manufacturing firm along the river, expressed the vision of area residents in his submission to the City's Committee on Works in early January 1882:

> This great scheme … will afford sites and facilities for all kinds of manufacturing enterprises, coal yards, lumber yards, and many factories we may not now think of, the establishment of which will most assuredly go far towards making Toronto, what I believe it is destined to become, a great manufacturing as well as a business centre … The miasmatic atmosphere with which this locality is too often troubled will be dispelled and the healthfulness greatly increased. Freshets and ice-jams will be things of the past, and the current in the River unobstructed. (City of Toronto 1881a: 888–90)

Visions for the Don River also appeared in real estate broadsides for the period, which referred potential east-end buyers to the proximity of the improvement project and its potential to 'materially advance the value of surrounding districts.' As one 1887 advertisement read, 'That hitherto despised stream' would soon become 'the commercial shipping centre of Toronto, not only for lake and river, but for railway commerce as well' (Armstrong and Cook 1887). The improvements, in sum, would turn a stigmatized and peripheral area into a productive district of the city, producing profits for the City and local landowners alike.

While area landowners and industrialists sought to remove the uncertainty and unhealthiness of their surroundings, city council members saw the improvement as an opportunity to augment paltry assessment revenues and to address flooding and health concerns that carried the threat of litigation. In early February 1880, Toronto city council resolved to form a special committee to report 'upon the state and condition of the Don River … from a sanitary point of view' and to develop a scheme to abate the nuisance. Alderman Davies, a vocal proponent of the Don improvement plan, argued that 'every manufactory brings with it assessable property, and when numbers of them are located on the River,

it will become a paying work and a profitable undertaking to the City' (City of Toronto 1881a: 7).

Little action seems to have followed from this resolution until five years later, when the Canadian Pacific Railway Company finally propelled the project out of council chambers. In the spring of 1886, the railway, which had attempted since 1881 to connect their east–west lines with Toronto, succeeded in winning the support of City officials to create an eastern entrance to the city along the west bank of the Don Improvement (Mellen 1974). The powerful railway company did much to secure project fortunes, and in March 1886 the Don Improvement Act was passed by the provincial legislature, empowering the City to borrow funds and expropriate lands to complete the improvement works.[2]

Work began in the fall of 1886, but the completion of the Don Improvement Project was anything but straightforward. The magnitude and ambitiousness of the project were soon apparent in a series of unforeseen problems and associated setbacks. Problems with contractors, disputes with area residents and industrialists, protracted negotiations with the railway companies, and unanticipated problems with the biophysical elements of the site all contributed to delay the project's progress and increase the amount of funds required (for a complete history see Bonnell 2010).

Before ending our discussion of the improvement project, we want to briefly focus on that section of the river that connected directly to Toronto Bay – for it is this section more than any other that has given rise to both historical and contemporary calls for change. Work on this section began in September 1908 and, by mid-July 1909, the river had been diverted from its curving westerly course into Toronto Bay to run instead directly south to meet up with an outlet known as Keating's Channel. Final adjustments to the mouth of the river occurred within the context of the newly incorporated Toronto Harbour Commission's (THC) 1912 Waterfront Plan. Under the leadership of THC chief engineer E.L. Cousins, a series of studies through 1912 presented different alternatives for the creation of new industrial land within the Ashbridge's Bay marsh. The THC decided that the river would curve southwest, then south to meet with a widened and reinforced Keating Channel before entering the harbour. Objections by the British American Oil Company, whose property lay along the line of the proposed diversion, led to the final amendment in the long history of plans to alter the river mouth. Rather than curving through British American Oil's property, the river would continue straight south to connect at a right angle with Keating Channel – the same jarring alignment that persists today.[3]

Re-naturalizing the Don in the Twenty-first Century

Our more recent history of the Don River examines attempts to undo the 'improvement' to the river that took place during the late nineteenth century. We start by highlighting the major elements in MVVA's winning submission for the Lower Don Lands and then look back to its antecedents and influences in an attempt to understand better why, within the relatively short historical span of a hundred years, such an apparently radical reversal is being pursued.

According to MVVA, its plan makes the site more natural, creating the potential for new networks of biophysical relationships within a more complex river mouth. The three most prominent features in the MVVA proposal, from our perspective, are the reconfiguration of the mouth of the river, the creation of new parkland, and the construction of five mixed-used neighbourhoods (see figure 13.1). The plan shifts the river's mouth so that it winds south of its current right-angle turn at the Keating Channel and then empties into the harbour. It envisions a curvilinear river with multiple outlets to the lake – the main flow emptying into the harbour after moving south of the Keating Channel and winding its way through the port lands. MVVA underscores the naturalization aspects of its plan for the mouth of the river. However, we believe that the naturalized Don River should be understood as a new form of socio-nature that unites various biophysical functions (e.g., flood protection) and has the social purpose of producing waterfront property and residential neighbourhoods supporting urban development.

Surrounding the river, a newly created landscape is to be devoted to parkland – the second prominent feature of the plan. This new parkland serves to bring together a more naturalized river mouth, a floodway, and new neighbourhoods into a single landscape 'that supports and becomes the generator of new urban life' (MVVA 2007: 6). The parkland is intended to simultaneously provide a central design feature and serve a key ecological function; that is, according to the plan, the 'central parkland … by virtue of its size, scale, and complexity, is able to take on river-mouth hydraulics while providing habitation and recreation … "Naturalization of the mouth of the river" is not a token gesture but a sustainable urban estuary in the functional and social sense' (ibid.: 10).

While the primary focus for the estuarine functions of the reconfigured river is to provide protection against flooding, its new entranceway will, without a doubt, provide a splendid view of the harbour and central waterfront. Five mixed-used neighbourhoods, the third major element of the plan, integrate the urban with the natural to take ad-

vantage of the amenities afforded by these harbour views, a closeness to 'nature,' and a central waterfront location. Land values around the river mouth, and other sites at the water's edge will be very high, we expect, and are thus likely to spark struggles to use some of the parkland for residential or commercial development.

Though MVVA's ambitious vision for the area has strikingly innovative and creative elements, it builds on ideas and plans suggested earlier by the city's activist movements concerned with conservation and civic environmentalism. Many activists have taken their inspiration from Elizabeth Simcoe, the wife of Lieutenant Governor John Graves Simcoe, whose paintings and descriptions of the valley in the late eighteenth century, with its clouds of passenger pigeons, majestic pine groves, and salmon-filled waters, remind us that the river was once at the heart of a thriving ecosystem. Conservationist Charles Sauriol (1904–95) is perhaps the best representative of this conservation legacy. Between 1927 and 1968, Sauriol and his family spent each summer in a rustic cottage in the valley. It was here that Sauriol wrote his 1981 book *Remembering the Don*, which has become a classic for conservation-oriented activists and civic environmentalists concerned with the Don Valley. In 1947 Sauriol co-founded the Don Valley Conservation Association (DVCA), which worked to protect valley resources and educate the public about the need for conservation. Nature walks and annual tree planting days helped inform the public about a threatened wilderness at their doorsteps, and the first ever Paddle the Don event, organized by the DVCA in 1949, encouraged Toronto residents to see the valley as a place for fun and recreation. A champion of the Don throughout his life, Sauriol's skill as a fundraiser and his unwavering dedication to conservation proved instrumental in protecting portions of the valley from development in the 1960s and 1970s.

Civic activism around the river valley received a boost from an unlikely source in October 1954, when Hurricane Hazel dumped 285 millimetres of rain in the Toronto area, washing out bridges and roads across the city and taking eighty-one lives in the space of forty-eight hours. In Toronto alone, over 1800 people were left homeless. Reactions to this storm marked a turning point in mid- and late-twentieth-century regulation of the city's river systems. As the city recovered during the winter of 1954–5, it did so with a new awareness of the power of biophysical processes and the significance of valley lands as natural drainage channels for flood waters. In 1957, four Toronto-area conservation authorities, including the Don Valley Conservation Authority, amal-

gamated to form the Metropolitan Toronto and Region Conservation Authority (MTRCA, now called the Toronto and Region Conservation Authority, or TRCA), which allowed for greater coordination among jurisdictions in regulating the use of valley lands. Multiple levels of government recognized the need to protect large sections of central Toronto from flooding, and development plans were put on hold until these problems were overcome.

Hurricane Hazel also prompted a broader grassroots response to environmental degradation in the city. Inspired by the activism of the late 1960s, a new generation of environmental activists began organizing to find more sustaining solutions to ecological problems. These efforts came to fruition in 1989 when a group of city residents and politicians established a citizen-driven body to advise city council on restoration initiatives for the Don River (Desfor and Keil 2004). The Task Force to Bring Back the Don has become the central body for activating change and has taken the lead in creative thinking in three main areas of responsibility: community organization; knowledge development and educational projects about the Don; and political advocacy. It has sponsored clean-up days, tree plantings, community stewardship programs, boating on the Don, walks along the Don, and fundraising events. And it was instrumental in getting funding and approvals for the production of the Chester Spring Marsh, a groundbreaking project aimed at re-naturalizing a wetland in the Lower Don Valley and thereby reorienting important societal relations with urban biophysical processes.

The task force, situated both inside and outside of City government, seeks to go beyond balancing the interests of 'nature' and the economy; its approach to ecological change is grounded in a new relationship between society and nature. In the case of Chester Springs Marsh, the restored wetland provides habitat (shelter, food, and a breeding ground) for wildlife in the city; helps to regulate the quantity and quality of water in the river; and removes harmful pollutants and contaminants from the environment (City of Toronto 2010). Here we have an example of how ecological and human health are woven together into a integrated network of socio-ecological relationships.

The task force's approach and actions are similar to those of other North American activist groups. Comparisons can be made, for example, to citizen-led initiatives to restore the Los Angeles River, which have recently resulted in the adoption of a River Revitalization Master Plan to transform a thirty-two-mile stretch of the river into an 'urban greenway.' Lewis MacAdams, poet and founder of the Friends of the

Los Angeles River, reputedly asked the river 'if it minded being saved. "The river did not say no," MacAdams recalled, "so I decided to go ahead"' (Coburn 1994: 50). In a similar way in Toronto, the Task Force to Bring Back the Don looked to the river itself as a source of inspiration. The MVVA consulting team appropriated this discourse when it wrote that it approached the design competition with two initial questions: 'Where does the mouth of the Don River want to be?' and 'What form can it give the city?' (MVVA 2007: 7). Here we have both an international planning team and a poet-activist from Los Angeles articulating the agency of rivers, and seeking guidance from those rivers instead of seeking to guide them.

Plans for the Lower Don Lands continue to change despite Waterfront Toronto's international competition and award-winning plan. In late 2008, Waterfront Toronto seemed to have shifted course by delaying implementation of its plans for the Lower Don Lands. This decision was connected not only to current political and economic situations (that is, a Conservative federal government with no elected representatives from Toronto, and the most serious economic recession since the Great Depression), but also to a proposal to, once again, link the future of the Lower Don Lands to a major international sporting event (see Laidley, this volume) – this time the 2015 Pan Am Games. The Lower Don Lands is being planned as the site for a number of athletic facilities for these games and the West Don Lands, the adjoining neighbourhood, is scheduled to be the home of the Athletes' Village. In addition, Waterfront Toronto announced on 19 May 2009 that Bill Clinton's Climate Initiative and the US Green Building Council's Climate Positive Development Program have selected the Lower Don Lands as one of sixteen global urban projects they will support in helping to demonstrate that cities can grow in ways that are 'climate positive' (Waterfront Toronto, n.d.) Thus, at the time of writing, plans for transforming the Lower Don Lands continue to evolve and move opportunistically forward.

A Comparison of Nineteenth- and Twenty-first-century River Transformations

As noted at the outset of this chapter, we are interested in comparing planning for new forms of socio-natures in city-building projects during the current period with those of the nineteenth century. Such a comparison will enable us to begin to unravel the complex nature–society relations embedded in hybrid landscapes and better understand the

production of new forms of socio-nature, including the unearthing of the ideology and politics that are integral to constituting those landscapes. We recognize, as do Waterfront Toronto and the Toronto and Region Conservation Authority, that the MVVA plan represents only a starting point, and will not necessarily be implemented as presented in the international competition. Nevertheless, we believe that comparing the MVVA plan with those of the nineteenth century provides insight into both continuing and changing societal relationships with nature.

We have identified four categories through which plans and planning link socio-natures to urban development and use these categories as the basis for our comparison. That is, we compare the ways the two plans represent socio-natures relationship with (1) changing land uses, their spatial organization, and the production of new territories; (2) altering biophysical processes; (3) increasing accessibility to the city; and (4) building new understandings of 'nature' and 'the urban' and competitive city processes.

Changing Land Uses, Their Spatial Organization, and the Production of New Territories

In both the nineteenth and twenty-first centuries, city planning has been centrally concerned with the production of new socio-natures. Supporters of the nineteenth-century Don River improvements sought to alter the then existing land uses and create new territory. Straightening the river would primarily benefit the railway companies by providing new space for the laying of tracks into and out of the city; filled land along the former meandering river channel would also create sites for rail-side industry. And for several aldermen with manufacturing firms along the river, the relocation of the river channel would extend their property and increase its value through proximity to the railway. Railway interests largely shaped the Don Improvement Project, shifting the emphasis from the development of a navigable shipping corridor to a rail and road corridor, from the river itself to the space alongside it.

A straightened river was also seen as a benefit to adjacent neighbourhoods, transforming a stigmatized and peripheral area into a productive district of the city. Adjacent neighbourhoods would benefit through economic growth and better health, and the City and local landowners would gain from increased land values. As noted by Alderman Davies in 1882, the Don Improvement Project would 'make [the area] as it ought to be – as healthy as any other part of the City' (City of Toronto

1881b). And as real estate developers enthused, improvements would dramatically increase property values in the area, making it 'the most desirable and valuable part of the whole city' (ibid.).

The MVVA plan, in contrast, frames its land-use changes within an overarching concept of an urban estuary. This new kind of urban space radically transforms the notion of an estuary as a mixed land-water territory that provides myriad essential biophysical functions for sustaining aquatic and land-based ecological networks. MVVA's new notion of an urban estuary foresees a highly desirable place not only for plants and animals and the exchange of nutrients, minerals, and so on, but also for human developments having abundant interactions with the environment, adjacent neighbourhoods, and other areas of the city. Its highly permeable land-water boundaries envision places for enormous social and economic exchanges as well as biophysical ones.

Complementing the area's estuarial exchange value, the MVVA plan aims to integrate what had been considered marginal and underutilized lands into an active and thriving urban space. This new space is intended to meet Toronto's contemporary needs, and to create a landscape for twenty-first-century urban life that supports the city's competitive position with other global cities. The plan conceives of the Lower Don Lands as a landscape for upwardly mobile members of the new knowledge economy, discarding in the process its reputation as a 'waste space' for noxious materials, marginalized people, and disreputable activities (see Bonnell, this volume). The new location for the river mouth will '[reassert] the presence of the river in the city' (MVVA 2007: 11), creating the attraction of 'urban nature' that provides a respite from the everyday tensions of high-powered city life situated just steps away in the financial district and creative-economy zones. And its development strategy for this new zone of opportunity is based on leveraging the attractive powers (i.e., marketability) of a more 'natural' river mouth, substantial parkland, improved transportation facilities, and a central city location all framed within an urban-estuary concept.

A comparison between this dimension of the nineteenth- and twenty-first-century plans suggests important similarities and differences in the portrayal of nature–society relations. Both plans present an instrumental approach to an external nature – that is, a belief in society's ability to manipulate nature to meet its needs. Society did undertake and currently proposes to manipulate nature through the production of a new landscape as a way to integrate a marginal area into active city life. And both plans propose to use nature to support economic develop-

ment. While nineteenth-century plans intended to transform nature for the use of manufacturing enterprises and coal and lumber yards – that is, making the area an industrial centre – current plans are designed to produce new forms of socio-nature that preclude industrial activities. These plans aim to support an economy dominated by knowledge-producing and information-processing enterprises, by constructing a profitable landscape of mixed office, residential, and recreational uses.

Altering Biophysical Processes

The primary biophysical process addressed by both the plans is flooding. Although major variations in river flow have resulted from 'natural' processes largely unrelated to societal activities, urbanization has long been linked to increased risks of flooding through the replacement of porous surfaces with pavement, and associated increases in the rate of surface run-off. And of course, building in a flood plain increases the risk of damage to property and person. In the nineteenth century, attention focused more on damage caused by annual spring freshets, while concerns in contemporary plans are discussed in terms of a major 'once in a century' storm such as Hurricane Hazel.

Proponents of the nineteenth-century plan predicted that 'freshets and ice-jams will be things of the past' following the completion of the improvement project (City of Toronto 1881a: 888–90). A new form of socio-nature would create infrastructure to move water and ice from spring breakups out of the area more quickly and thus reduce damage from flooding.

The MVVA plan speaks to flood control in two ways. First, it incorporates a berm constructed as part of the Don River Park into its plan, thereby simultaneously reducing liabilities associated with building in a flood plain and creating opportunities for urban growth and development (see Introduction, this volume). The 7.3-hectare berm is fundamentally a flood protection device, a mound of earth that raises the ground level above predicted flood-water levels from a once-in-a-century storm. With the berm in place, constraints on building within the Regulatory Floodplain west and north of the Don River can be removed (Waterfront Toronto n.d.c.: n.p.). The berm, itself a special and quite technically sophisticated form of socio-nature, functions to make possible development on 210 hectares of central-city land, and also serves as parkland with an 'urban meadow' (ibid.). Second, the MVVA plan proposes to reduce the risk of flooding by constructing a floodway with

multiple paths by which the river will be able to reach the lake, and through the inclusion of marsh features to absorb and filter seasonal floodwaters. The plan 'proposes a braided system of water channels cut to different depths to accept and deliver varying volumes of water, from low to moderate to severe flood events' (MVVA 2007: 36). Thus, MVVA's multi-tasking socio-nature intends not only to reduce the risks from flooding but also to make possible urban expansion with new neighbourhoods and recreational opportunities all working together in support of twenty-first-century urban lifestyles. As the proposal states, 'the bold new park [the urban estuary] at the centre of our scheme consolidates the program of a naturalized river mouth, floodway, recreational park, and neighbourhood icon into a single and complex central landscape that supports and becomes the generator of new urban life' (ibid.: 6).

The production and removal of sediment in the river is another process addressed by both the nineteenth- and twentieth-century plans, and has long been recognized as a contentious problem by harbour-minding bodies and conservation authorities. The nineteenth-century improvement plan was expected to harness 'nature's power' to transport silt deposits from the river into Ashbridge's Bay. The 'natural' relocation of the silt would help to fill the marshlands and relieve the city of a public health nuisance – both of which would be of considerable economic benefit. Sediment removal also plays an important role in the MVVA plan, which includes the construction of a basin in which sediment will be collected, then dried and stabilized prior to its being reused to help form the future landscape and parkland (MVVA 2007: 36), revealing another purportedly 'win-win' technical solution for both the environment and economy.

Increasing Accessibility

By accessibility we mean both opportunities for people to interact with the river and lake and, more generally, reducing the friction of interactions within neighbourhoods and the city – that is, improving transportation networks and facilities.

Both nineteenth- and twenty-first-century plans seek to increase accessibility to interact with the river. Earlier plans 'channeled nature' towards city-building ends, intending to tame it in order to produce returns for long-term infrastructure investments. The nineteenth-century plan envisioned the establishment of interactions with a straightened

and encapsulated river, creating a predictable corridor for transportation (rail and shipping) and for the removal of wastes. Generally undertaken to meet utilitarian ends, the improvements were expected to attract investors who sought to secure a return on long-term and large-scale investments from the infrastructure projects. The interactions between humans and the river were to be considerably less intimate than those proposed by the MVVA plan.

In the twenty-first century, the river mouth has been 'unleashed' to provide opportunities for more up-close interactions with the river and lake and to act as an attraction for revitalizing mixed-use neighbourhoods. The MVVA plan promotes accessibility to the environment by providing opportunities to play near, swim in, boat on, or contemplate a benign socio-nature. It aims to provide extensive water-based recreation opportunities, and to bring the water's edge into the public realm so as to enrich experiences where land and water meet (MVVA 2007).While both the nineteenth- and twentieth-century plans stress the need for improved accessibility in the city, there are major differences in the transportation facilities proposed by the two plans. The nineteenth-century plan was primarily concerned with increasing the railways' access to major urban markets, better navigation on the Don, and the establishment of stronger and more reliable bridge structures across the river. The MVVA proposal, however, speaks both to linking its new neighbourhoods into the fabric of the city and to increasing the ease of movement within those neighbourhoods. It recognizes the importance of north–south connections to link the area with the city, and foresees penetrating the rail-corridor barrier with improved pedestrian and trolley underpasses. Recalling one of the plan's principal themes of sustainability, it proposes a 'responsible balance' between private automobile facilities and more environmentally friendly modes of transport (pedestrian paths, public transport, and bike lanes) to increase ease of movement within neighbourhoods (MVVA 2007: 56).

Representations of Nature and City and Their Relationships to Competitive City Processes

The two plans represent relationships between 'nature' and the city in significantly different ways. A discourse of 'improvement' featured prominently in the nineteenth-century plan (see the Introduction, this volume; M. Moir 1986), whereas in the MVVA plan the notion of 'sustainability' dominates.

The Don Improvement Plan, while drawing on notions of progress and modernity, also includes ambivalent representations of nature. The river was seen to be both an asset for the city and an impediment to progress. Early European colonists saw the natural harbour as attractive for both military and shipping purposes, and it was the prime reason for their settlement of the city. But by the end of the nineteenth century, both the river and the harbour were seen to be somehow less than what they potentially could be. Many of Toronto's business elite and politicians thought that human intervention was needed to improve the lower stretches of the river to bring about progress and modernization, in the form of industrialization, to the city. The improved river would attend to the interests of the railways, provide additional land for new businesses, improve the health of nearby residents, and increase tax revenues for the City. But making the river more 'natural' (in the twenty-first-century sense) was not what the improvement plan's proponents had in mind.

In the MVVA proposal, a naturalized river mouth promotes urban 'livability' and complements the complexity of contemporary lifestyles by providing spectacular images of 'sustainable habitats for wildlife, fishes, and people' (MVVA 2007: 6). The new urban estuary's two distinct worlds, the urban and the natural, are brought together as a web of ecological, economic, spatial, and social interactions. In the process, MVVA intends to 'recapture' the waterfront moment: 'We want to create a healthy ecological setting, as this is a prerequisite to sustainable habitats for wildlife, fisheries, and people, and the intractable link to ensuring market reinvestment in this place' (ibid.). Here we have an explicit recognition of and appreciation for relationships between socio-natures (i.e., a healthy socio-ecological setting) and market investments, even though these relationships are seen as diffuse and unregulated, and, in all likelihood, place more emphasis on market-based investments than on ecological integrity.

The MVVA's plan for greater complexity and diversity of socio-nature's linkages with contemporary urban life is connected with two aspects of the dominant mode of development. First, the plan envisions the production of mixed-use up-scale neighbourhoods and urban amenities that are intended to improve the city's competitive position at both the regional/metropolitan (the central city versus the suburbs) and global levels (cities competing within an international hierarchical network) (MVVA 2007). Second, the plan recognizes that, in a global

economy, materials are transformed into commodities and distributed to markets through networks (spatial, technological, financial, cultural, and organizational) that are more expansive and more intricate than those that existed during the nineteenth century. Its plan to construct an urban estuary promotes post-industrial economic activities that have extensive links with globally networked production systems.

To briefly summarize this section, we have found that both the nineteenth- and twenty-first-century plans seek to produce new forms of socio-nature as a way to enhance prospects for marginal neighbourhoods and to lay the groundwork for broader urban developments. In the nineteenth century, the Don Improvement Plan envisioned a straightened river supporting development of a marginalized neighbourhood as well as efforts to industrialize the city. In the twenty-first century, the MVVA plan for an urban estuary looks to naturalize the river mouth in support of mixed-use sustainable neighbourhoods and a post-industrial economy.

Conclusions

In this the final chapter of the volume, we sought to understand better Toronto's changing waterfront by comparing nineteenth- and twenty-first-century plans for reshaping the lower stretches of the Don River. Within a relatively short historical period, city builders have decided first to straighten and encapsulate the river and then to reverse course and naturalize the river's mouth.

Both the nineteenth-century Don Improvement Plan and the twenty-first-century MVVA plan for an urban estuary and berm-park support the city's economic development. In the earlier period, the Don was altered as part of city building for an industrial era. The twenty-first-century plan aims to modernize socio-ecological relationships by reducing the risk of flooding, revitalizing a marginalized waterfront area, constructing new urban neighbourhoods in which both nature and society are seen to function for their mutual benefit, and producing an urban lifestyle that appeals to a sophisticated and cosmopolitan (and, some would say, 'creative') population. For us, MVVA's urban estuary is an exciting concept that opens up new possibilities for acknowledging a fusion between the urban and the natural. But the concept as described in the MVVA proposal does not resolve a fundamental problem – it fails to acknowledge the ideological positions and social relations

that are embedded within such an urban landscape, and thus does not adequately recognize the economic and political struggles and societal tensions that will inevitably arise.

While both plans aim to transform socio-natures, they contain some important distinctions. First, the nineteenth-century plan is replete with the language of 'improvement.' Nature was regarded as both an asset and an obstruction to the city: an asset, as the foundation for large infrastructure projects; an obstruction, for its perceived inefficiency, its unpredictability, and its destructive potential. As Toronto historian Henry Scadding wrote of the nineteenth-century harbour improvements, nature could be improved by diligent human action: 'When at length the proper hour arrived, and the right men appeared, possessed of the intelligence, the vigour and the wealth equal to the task of bettering nature by art on a considerable scale, then at once the true value and capabilities of the Don were brought out into view' (1873: 559–60).

Contemporary plans for an urban estuary, by comparison, harness the language of 'sustainability' and ecological modernization. Sustainability differs from 'improvement' in its fundamental recognition that economic growth will be undermined unless society pays special attention to the ecological systems that underlie that growth – and their unlimited exploitation is understood as a threat to both economic production and human well-being. As the MVVA plan indicates, 'Our proposal embraces the use of sustainable materials and energy savings, but also goes beyond this to encompass sustainability on multiple levels: sustainable communities that provide a broad range of housing, employment, and recreation; a sustainable lifestyle that encourages pedestrian use and public transportation; a sustainable real estate value with structures that are well built and elevated above the regulatory flood levels' (MVVA 2007: 3).

Second, both plans carry important linkages between socio-natures and public health. In both periods, the plans presume an underlying fear of external nature as a serious threat to human health. In the nineteenth century, wetlands were feared because of their association with miasmas and, by extension, with a host of ailments including cholera and typhoid fever (see Jackson; Bonnell, this volume). More recently, health analysts have noted that the presence of environmental toxins in the air, water, and soil, particularly in urban areas, are potential causes of cancer, heart disease, and a number of respiratory ailments (L. Nash 2006). The MVVA plan's recognition that contaminated soils and groundwater must be cleaned up is an indication of this underlying concern.

In closing we note that the outcome of the MVVA proposal remains, of course, to be determined. Whether or not the project moves forward – and the shape it will eventually take – depends on a host of local, regional, and international contingencies that are not predictable at this time. While neighbourhood revitalization and increased value for residential properties in the new neighbourhoods are likely to result from such a proposal, the project's ability to improve the ecological viability of the highly urbanized Lower Don Lands remains uncertain. The MVVA proposal affirms, however, in clear unambiguous language that at the beginning of the twenty-first century, just as at the end of the nineteenth, the production of socio-natures are essential aspects of urbanization processes.

NOTES

1 Formed in 2001 with representatives from the federal, provincial, and municipal governments, the Toronto Waterfront Revitalization Corporation (TWRC) later changed its name to Waterfront Toronto. We have used the name 'Waterfront Toronto' throughout, to avoid confusion.
2 On 25 March 1886, the Ontario Legislature approved An Act Respecting the River Don Improvements (Statutes of Ontario Act 49 Vic., c. 66); the act was passed subject to the approval of the eligible electors of the City of Toronto.
3 British American Oil first recorded its objection to the proposed Don alignment in January 1913. By June of that year it had proposed an alternate alignment for the river and, in early July, Cousins reported that a 'compromise plan … had been arrived at as a result of his conference with the representatives of the Company' (Toronto Harbour Commissioners 1913a).