

Toronto's Port Lands: Climate Change and a Transition in the Nature/Culture Relationship.

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A Major Paper submitted to the Faculty of Environmental and Urban Change in partial fulfillment of the requirements for the degree of Master in Environmental Studies
York University, Toronto, Ontario, Canada

July 30th, 2022

Abstract

On Toronto's east-central waterfront, the Port Lands project is transforming an area that used to be considered one of the most underused parts of the city. The project aims to protect the surrounding areas from the Don River floodplain by rerouting the river and renaturalizing the landscape that surrounds it. The Port Lands project is heavily shaped by the anticipated pressures that climate change will place on the cities' infrastructure and ecological systems. Understanding the Port Lands within the framework of a historical trajectory of land use, from industry to vacancy, then vacancy to now a utopian vision of a 'green' future community illustrates how transformations in the ideologies of nature are being transcribed onto the cityscape. The main objective of this study is to investigate whether climate change is enacting transformations to the ways in which we see the nature/culture relationship. Through an analysis of the historical context, the policy contexts, and the larger dynamics at play in the Port Lands, this study shows how constructed ideas of nature and landscape are shifting to incorporate climate change strategies and accommodate urban natures. The Port Lands project, both as a physical change in the landscape as well as in its Planning Framework as a projection of an idealized future, exemplifies a transition in the ideology of nature which is being catalyzed by climate change.

Foreword

This paper represents the culmination of my work over the Master in Environmental Studies and Planning program at York University. This major paper is an encapsulation of much of the work and learning I have done over the course of the program. Through my research and the process of producing this case Study of the Port Lands, the nature/culture relationship, and climate change, I have gained in-depth knowledge of environmental planning theory and practice in the context of Toronto.

This paper engages with all but one of my learning objectives from my Plan of Study (POS) for the program – the other being a GIS objective which I completed through ENVS 6599 - GIS Independent Directed Study, as well as through my experiential learning component at the Region of Niagara as an Environmental Planning Student. This Major Paper marries my learning objectives surrounding environmental planning, Ontario's planning context, climate change adaptation and mitigation strategies, ecosystems approaches, and understandings of urban political ecology.

This paper engages with my learning Objective to develop a deep understanding of urban planning and urban planning theory through the literature and policy review I conducted for this study as well as through taking the relevant courses and through my internship with the Region of Niagara. This paper and the policy review conducted for the research conducted for this paper also satisfies my learning objective to gain extensive knowledge of the planning context of Ontario and Toronto. This paper as well as my internship with the Region of Niagara have prepared me and facilitated my learning and skills necessary to meet the program requirements of the Ontario Professional Planners Institute for candidate membership.

Through the literature review and research, I conducted throughout this program and for this research paper I have gained a thorough understanding of how urban political ecology as a framework asks critical questions on the socio-cultural and economic impacts of urban environmental policies. I have also accomplished my learning objectives regarding climate change adaptation and mitigation strategies through the research conducted for this paper as well as other components of the program including course work. This paper also engaged with

the local ecology systems, the environment, and urban natural biophysical processes components of my Plan of Study and is part in accomplishing this learning objectives.

I have accomplished all my POS objectives and components of the MES and planning program by taking the relevant courses, completing research projects, gaining experience through my internship with Niagara, and through the primary research and completion of this paper. This major paper contributes to conversations on the nature/culture relationship, climate change strategies and policy, and urban ideologies of nature and landscape.

Dedication

Throughout the masters program and the process of writing this paper I have thought so much about landscape and the landscapes of my life. Being from the Northwoods of Wisconsin, living in Colorado, and growing up in Chile, then moving to Canada, landscapes have always been shaping my perspective and the ways I look up to the sky. I'd like to dedicate this paper as a love letter to the landscapes that have shaped my life. From the Northwoods to the high plains, to the Andes, and then to Lake Ontario, I have found things to love in each of these places, all of these lands. So, this is my love letter to landscape, for changing the way I see myself in the world, for letting my imagination run, and teaching me that life is lived well outside.

Of course, none of these places or landscapes would mean half as much if it weren't for the people I get to live this life with. I also dedicate this to my family and chosen family, who have always nurtured me to be my true self. Who have fostered communities of care and learning. To my parents who taught me how to approach every situation from the perspective of compassion. Who were constantly towing my sisters and I along for adventures, to go see mountains, beaches, desert skies, geysers, and volcanoes. To my dad, Mike, who would always bring rocks home and taught me a love for science and curiosity, who always makes me giggle, and brings me comfort even in silence. To my mom, Dorothy, who showed me how to be tough as nails but soft as butter. Whose hands taught me countless skills and ways of caring for the world. To my sisters, Nicole, and Katie, who are the best teammates anyone could ever ask for. I'm ever so lucky to have sisters like you both, I love the ways we are so similar and so different. I am also so thankful for the people you have surrounded yourself with, I have incredible brother's in-law. So, thank you to my family for supporting me so fully the last few years, without you I would not be here, I dedicate this to you.

To my chosen family who sometimes know me better than I know myself, this is also, of course, for all of you. Your belief in me is astounding, and I can't thank you enough for supporting me and encouraging me to try and do this masters thing. If you do read this paper, thank you, if you don't, thank you still. Having friends like the ones I have is an irreplaceable

thing. I can't wait to be able to spend time together again. Big doggies for life. I know I tell you all the time that I love you and I really mean it!

Finally, I also dedicate this to my friends that are no longer here, who I still have so much to say to but can't. I know you'd be proud of me.

All my heart,

Jenny

Acknowledgments

I want to express my deepest gratitude to my supervisor Dr. Laura Taylor, who encouraged me to keep going, to think deeper, and to keep asking questions, without your help and support this project would not have been possible. Our conversations on the nature/culture relationship and climate change strategies have been invaluable to me. I want to thank Dr. Jennifer Foster, whose courses on environmental planning and design and writings on vacancy have inspired my continued interest and passion in the program and beyond. I want to thank my advisor Dr. Anders Sandberg, for presenting me with interesting materials and conceptions of the 'right' kinds of nature, and for encouraging me to think of different perspectives. I also want to thank the EUC faculty more generally, for supporting me and engaging me through the program whether it be over zoom or in person.

I want to thank the friends I have made through the program, who have made our time as students during COVID fun and inclusive, and who have put in a lot of effort into getting people together, online and in person, through lockdowns and openings. I cannot wait to celebrate with you all. I want to especially thank Maggie and Farida, who have spent countless hours talking and working with me, who have encouraged me and supported me, I can't express how thankful I am for your friendship. Here we are at the end and the beginning.

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How can you grieve a landscape
you never really knew?
The piles of soil shift,
And fill
Shift, and fill
And I feel a shift within me

To watch dirt and soil
Rock and seed
Go to piles and fill
Pile and fill
A landscape dances for me

Becoming and unbecoming
A marsh
A river
A channel
The land shifts
and something shifts within me.

To grieve a place in between
A land that won't stand still.
This space is not yet a place
How can I grieve vacancy?

And yet,
I want the in-between
The beginning of the middle.

I fear the end
When all the nooks and crannies
Are just so.
I'll grieve the dirt piles
I'll grieve the weeds.

The land shifts
And something shifts within me.

Jenny Donnelly, 2022

I. Introduction

“All water has a perfect memory and is forever trying to get back to where it was.”

Toni Morrison

Climate change is set to define the current era, affecting temperature and precipitation, infrastructure and power networks, agriculture, and influencing the ways that we plan for and build new communities. On Toronto’s east-central waterfront, the Port Lands project is a major flood protection and Don River mouth naturalization which is set to ‘unlock’ the surrounding lands for development (Toronto, 2017a). The renaturalization of the Don River comes more than a century after the river was straightened and channelized, then given a right angle before its outlet into Lake Ontario. The plans for the Don’s new river mouth incorporate new habitats for native species, additional river outlets, and a raised landform. The major objectives of the Port Lands flood prevention and river renaturalization project are to protect a huge area of Toronto’s downtown waterfront from flooding as the city anticipates a future under climate change. The Port Lands project in Toronto is an example of how climate change is catalyzing new ways of conceptualizing nature in designing and planning new communities. Through a case study of Toronto’s Port Lands, I investigate the ways that the plans and designs for the project incorporate new ideologies of nature and reflect a transition in the nature/society relationship. An ideological shift in the ways that cities and society relate to and with nature reflects the ways that the pressures of climate change have been affecting our sense of place within the world. This transition of seeing ourselves (humans) as above nature to living within and with nature is important if we are to attempt to mitigate and adapt to the coming tides of change. Providing public access and connection points to nature and natural systems has the potential to provoke strong relational experiences where the inherent value of nature and biodiversity is cherished without the reliance on capitalist measures of value.

In this case Study of Toronto’s Port Lands project, I attempt to answer several questions, namely: How are climate change strategies changing the ways that we plan for and build new communities? How are ideologies of urban nature transitioning under the contemporary

climate change context? How is infrastructure (including green infrastructure) being used to represent a socio-cultural connection to the natural world? And, what can be done to shape new development into accomplishing climate change objectives? To do this I begin with a brief review of the methods I used for this case Study. Then, I conduct a literature review of relevant literature and theoretical frameworks related to landscape and urban environmental planning which I lean on through my research and through this case Study on Toronto's Port Lands. I then explore the history of the Port Lands and Don River mouth landscape to provide historical and socio-cultural context for the case Study. I include a review of the current phases and progress of the project to situate the study of which I am writing as the project moves forward every day. I also include an overview of some of the relevant provincial and local Plans and Policies which relate to the Port Lands and have largely dictated its objective, process, and hoped-for outcomes. In my Results I discuss the themes and language that is prominent throughout my interviews, the Port Lands Planning Framework, and other media releases and blog entries by Waterfront Toronto and the City of Toronto. I focus on the Port Lands as a socio-natural assemblage, acting as a link between nature and the city. I finish the case Study with my Discussion and Conclusions on how socio-natural assemblages are influenced by local context, ideological transitions on urban natures and spaces and how policy is an important tool to refine the success of urban sustainability and resilience projects. The Port Lands project shows how climate change is shaping new development considerations and catalyzing a shift in the way nature is thought of, planned for, and designed as integral city infrastructure.

In this study, I use the word "nature" as a general word to describe natural systems and processes, the more-than-human, as well as hydrogeologic and ecological systems and processes. For the context of this study, I mention Western understandings and ideologies of nature and urban processes and in this I refer to the urban Canadian post-industrial context of Toronto. Here, western ideologies of nature refer largely to the hegemonic settler understandings of nature perpetuated in globalization processes and the spread of "free-market democracy" (Geisinger, 1999 p. 43). Though for nature as a term more broadly I refer to the understandings of nature brought forward by Raymond Williams though for the purposes of this work I refer to his third sense of nature: the material world itself including variable

meanings which may or may not include humans and our constructions (Williams, 1983). Nature in this study of the Port Lands is a concept used to describe the extra-human world, though in the understanding of this study nature sits on a point of transition to include humans and our constructions. For the Port Lands, the new path of the Don River and its mouth will still be natural, for natural processes and beings will still cycle and exist within, around, and through it.

Existing under the context of climate change brings with it levels of existential dread and apocalyptic visions of the future.¹ If we are to create a positive and sustainable future for our urban communities, it is vital that we as a society change our relationship to and with nature, seeing its value as inherent, and moving away from extractive dynamics based on capitalist models of resource exploitation. Nature's place within cityscapes must be seen as a vital component of life. We cannot afford to leave our rivers, woodlands, and wetlands as an afterthought to development. Going forward, climate change will put unimagined pressures on our communities and infrastructure. Through a new relationship with nature our cities can adapt to the unpredictability of the climate change future while mitigating worsening conditions. We do not have dominion over nature, but it is indeed the forces of nature that will shape the way we live in the future under climate change. The Port Lands project's emphasis on climate change and flooding as a major driver of the project's design considerations exemplifies how understandings of urban nature are undergoing a transformation under the current and expected pressures of climate change.

¹ For work on living under the context of climate change see the artwork of Lisa Hirmer, the current artist in residency for Waterfront Toronto.

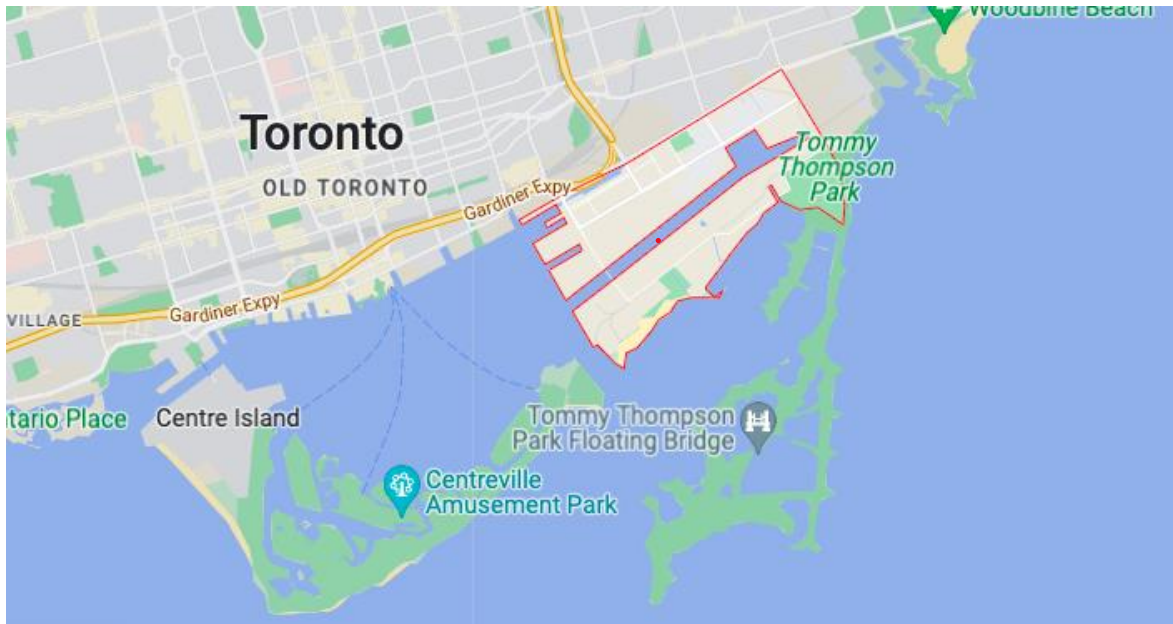


Figure 1. Map of Toronto with red line showing limits of Port Lands area. Courtesy of Google.com/maps



Figure 2. A map displaying an orange perimeter around the areas that will be flood protected by the Port Lands Don River Mouth renaturalization and flood protection project. Image courtesy of Toronto, 2016.

II. Methods

For this study I produced a case study of Toronto's Port Lands in order to ask the questions of a) how is urban and environmental planning evolving under the context of climate change? And b) whether climate change is influencing the nature/society relationship in current understandings, and c) how does this influence manifest within the Port Land's local understandings of place, purpose, and aesthetic? To produce this case study, I reviewed a variety of primary and secondary sources to tease out major themes and patterns surrounding climate change and the way that planners, urban designers, and politics influence the development of new urban communities.

As someone who has a background in ecology but is studying to be a planner, I approached this research topic from the frameworks of urban political ecology, ecosystems approach, as well as drawing from landscape urbanism and assemblages thinking. I am interested in the how contemporary ideologies of nature shape not only the physical formations of urban natures but also the constructed narrative of place that connects us within and to the space. Important to this study is the examination of how the cultural and historical legacies of the Port Lands have inspired the ways in which planners and designers construct the imagined future of the Don River. I approached this case study from an understanding of the space as part of the post-industrial evolution of city-spaces and the contemporary notions (feelings) of land scarcity in a quickly urbanizing world. I grounded my research in the understanding of post-industrial urban landscapes of the twenty-first century undergoing transformations of space from industry, production and perhaps vacancy, to spaces of public recreation and consumption (Sandberg et al., 2013; Angelo, 2021). How the imagined future of the Port Lands aligns with the reality of the post construction is temporally out of the scope of this paper.

To examine the interactions of the Don River naturalization with climate change and a growing global city, I completed a comprehensive analysis of the Port Lands Planning Framework (2017) and associated documents, including the Environmental Impact Assessment and Terms of Reference for the development (TRCA, 2014; TRCA, 2004). I reviewed Toronto's Official Plan, Toronto's climate change strategy, the Provincial Policy Statement (PPS) and other

provincial governments' plans and policies applicable to the Port Lands, provincial growth, climate change, and natural heritage planning. I also conducted primary research in the form of interviews with planners, a landscape architect, a biologist, and the current Waterfront Toronto artist in residence. The interviews were semi-structured lasting between 45 minutes to one hour. The purpose of the interviews was to explore the themes of climate change in the context of Port Lands flood protection and naturalization of the Don River. I subsequently transcribed the interviews and analyzed the language looking for recurring themes and patterns in association with climate change, the urban landscape, and the future of community building.

My secondary research consisted of scholarly literature review based on the framework of urban political ecology, regional environmental planning, urban climate change adaptation and mitigation strategies, and further literature related to the garden city movement, the nature/culture relationship, climate change, socio-natural assemblages, landscape urbanism, new urbanism, and complete communities. For this case Study I also conducted a thorough reading on the history of the Port Lands and the Don River mouth. Further research delving into the particularities of the current Port Lands plans and construction designs involved attending various webinars and online events in 2021 and 2022 held by Waterfront Toronto, the City of Toronto, the Toronto and Region Conservation Authority (TRCA), reading the transcripts from the local city councillor's townhall meeting regarding the Port Lands, reviewing various media from Waterfront Toronto and CreateTO, as well as reviewing media from 2016 to 2022 surrounding the Port Lands from local news outlets.

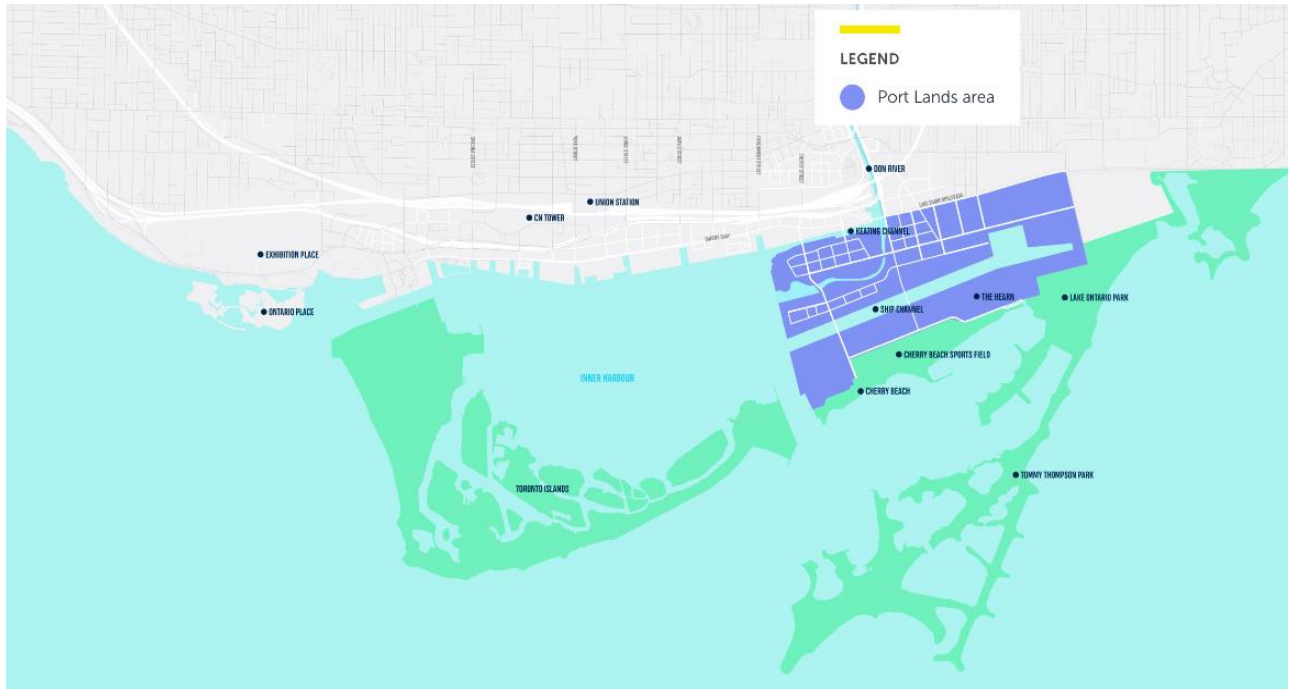


Figure 3. A Basic Map showing the limits of the Port Lands area on Toronto's waterfront. Image courtesy of portlandsto.ca

III. Introducing the Nature/Culture relationship. What is Nature's relationship to Cities? How does Climate Change Factor in?

Past Scholarship/ Literature Review

The Port Lands for many years has been like a no-man's land in Toronto, not feeling like part of the city itself but being a space you either drive or ride your bike through on your way to Cherry Beach or the Leslie Spit. The project currently being undertaken by Waterfront Toronto and the three levels of government (municipal, provincial, federal) is literally carving out a new path for the Don River, renaturalizing and protecting the riverbanks from erosion, and lifting the surrounding area above the 100-year flood event levels (S. Heuchert, personal communication, April 6, 2022; Waterfront Toronto, 2017). The prioritization of climate change considerations alongside the emphasis of nature and landscape connections in the Port Lands plans and designs exemplifies how transitions in nature ideologies can be transcribed onto the landscape. The area of the Port Lands has undergone shifts from past uses as a heavily industrial area to then the 'underuse' of the lands due to flood risk, and to now encompassing a vision for a renaturalized river that protects the surrounding areas from flooding and assists in neighbourhood adaptation to climate change (Bonnell, 2014; A. Barter, personal communication, April 12, 2022). The Port Lands plans depict ideas of the future where nature and cities exist in synch instead of humans having dominion over nature or the other way around. The Port Lands project designs and plans signify a city in transition as well as changes in the way that urban natures are conceptualized by planners, designers, and the public. To understand this transition in nature ideologies I sought out to view the lands and associated plans for the Don River flood protection and river renaturalization project from different theoretical perspectives to gain a fulsome understanding of how this endeavour represents a shift in the nature-culture relationship catalyzed by climate change. New and different (from a Western perspective) understandings of the natural world and the human place within it are being incorporated into contemporary planning processes and expressed in plans through public-to-nature connection points. Through the flood protection and planning framework, the Port Lands project exemplifies both a transition in land use on Toronto's east-central

waterfront as well as an expression of a planning narrative that describes infrastructure as a bridge between nature and the city. Reviewing the literature of urban planning and the inclusion of nature in urban imaginaries frames the Port Lands project within conversations on the relationship of cities and nature, and specifically this relationship as it is changing under the conditions and context of climate change.

The inclusion of nature within western city planning came largely as a reaction to the historic social and environmental troubles of large industrial cities. Responding to the degraded environmental conditions of the industrial city, social theorists, and urbanists of the turn of the twentieth century began to look for alternatives to the social isolation, pollution, and poor housing conditions urban dwellers were experiencing (Howard, 1902; Fishman, 1982; Angelo, 2021). Ebenezer Howard, an English planner, and founder of the garden city movement, proposed instead to find a desirable balance of town and country, bringing nature into the public sphere (Howard, 1902; Angelo, 2021). The plans of Howard's (1902) Garden City movement envisioned town living as a respite from the density and smog of the large city. In practicality the vision functioned to encourage sprawl and the ideal of the modern life in the suburbs (Angelo, 2021). It was through the inclusion of parks and green spaces within city planning that natural spaces came to represent spaces of leisure and consumption for the middle class rather than sites of production (Sandberg et al., 2013; Angelo, 2021; Bonnell, 2014). This evolution in the ideology of nature by the larger public brought with it an aesthetic of landscape which privileged certain *kinds* of natures and *types* of vegetation communities that were reminiscent of the idealized European countryside gardens (Sandberg et al., 2013; Heynen et al., 2006). Lawned, open spaces for leisure and recreation became the norm of city parks and urban green spaces (Angelo, 2021). Nature as a wild and unpredictable entity was seen as something to conquer and shape to human use rather than something to exist in synch with (Merchant, 2004).

Howard's Garden Cities relied on the uniquely urban conception of nature of the Romantic period of the time as a medium of leisure instead of labour and pointed to the imagined benevolence of the green and natural (Howard, 1902; Fishman, 1982; Angelo, 2021). Greening was seen as a solution to the social and environmental ills and spurred a

transformation of the urban/natural ideology within cities. While localized debates on how to build nature in cities remain, the nature/culture debate was and continues to be more than just questions of how nature should be included within cities and without. Discussions of the meanings and metaphors of landscape also include debates of nature's agency and the ways that humans project meanings and socio-cultural productions of space onto nature (Demeritt, 1994). In efforts to reconcile debates on nature's agency and the social production of landscape, scholars like Demeritt (1994, p. 165) turned to the works of Latour and Haraway for a new vocabulary of describing "nature as a monstrous hybrid, a lively, if socially constructed actor". For my research on the Port Lands the socio-natural hybridity of nature surfaces as a multi-modal instrument in conceiving of the Don River mouth as both having agency as well as containing socio-cultural understandings of space and landscape (Swyngedouw, 1996, Demeritt (1994).

In the mid-to-late twentieth century, notions of land ownership and the individual access to private recreation natures created the conditions of suburban sprawl and highly controlled nature spaces. While notions of the 'green' suburbs projected images of health and balance, the underlying realities of these spaces were of ecological destruction and an unsustainable cultural expectation of land and nature ownership that has continued up to this day (Angelo, 2021). In response to the sprawl of the latter half of the twentieth century and the unexpected consequences of low-density development patterns, came New Urbanism, offering compact walkable streets, and accessible public spaces (Grant, 2005). New Urbanism argues for development and city building patterns that facilitate walking and an active participation in the public realm, creating strong local urban identities (Grant, 2005 p. 3). Calling for compact town-centres and a reproduction of "neotraditional urban villages", New Urbanism also advanced the idea of what Grant refers to as the "good community" (Moore and Trudeau, 2020 p. 384; Grant, 2005 p. 3). The New Urbanism of the early 2000's still resonates as planning takes on the responsibilities of growth and intensification, the expectation of density becoming the norm, as the state attempts to pivot away from car-centric communities (Grant, 2005; Moore and Trudeau, 2020; PPS, 2022). For the Port Lands, new urbanism is the ideological basis for the complete communities described in Toronto's Official Plan as well as within the Port

Lands Planning Framework (Toronto, 2017a). Contemporary urban climate change mitigation strategies and the ideas of complete communities rely on the compact urban forms that new urbanism describes. By facilitating walking and active transportation, planners and urban designers are emphasizing localized understandings of culture and belonging in attempts to ground residents within their communities and reduce the need to travel by car.

Situating the Port Lands within the larger regional landscape is necessary as the Don River mouth and its associated valley lands rely on the hydrogeologic processes at the regional scale. Situating the Don River within the regional scale allows for a broader understanding of the limitations and parameters of development as well as highlighting the importance of the flood protection at the city-scale. Environmental planners who focus on the landscape from a regional perspective use the larger lines of the landscape to understand the parameters of development. These scholars understand development patterns as following the ecology and topography of the land. As Michael Hough writes in his work on regional environmental planning, “the valley systems should be conceived of as ‘green infrastructure’, the overall structuring element that should influence the form and character of development, which suggests that built form and landscape are interdependent.” (Hough, 2004 p. 246). For regional environmental planners, landscape dictated the form of development while for landscape urbanists, landscape was the medium, design block, and ideology (Corner, 2005; Vincenzotti, 2017). For my research, the Port Lands landscape appears as a socio-natural assemblage, presenting and representing a physical landscape as well as a manifestation of socio-cultural productions of natures on Toronto’s waterfront.

Assemblages theory refers to the multiplicities and manifold ways of understanding relationships and the “space of possibilities” within these varying comprehensions (De Landa, 2006 p. 27). In the context of this study, assemblages theory helps to reconcile some of the tensions present within landscape urbanism theory, namely that the term landscape is used in different ways, as a building block of design, as a medium, and as an imaginary (Vincenzotti, 2017; Corner, 2006). Assemblages thinking allows this reconciliation by not asking us to resolve the varying uses of the term landscape but instead to hold them both separately as well as together. Landscape as a socio-natural assemblage can be each of these things, medium, design

block, and ideology, in turn and in sync. How these uses can paint different pictures of the same space reveals the manifold approaches used to conceptualize and develop the Port Lands. An in-depth understanding of the Port Lands project and the ways in which it comes together both as a narrative-idea, as well as an infrastructural land mass encourages us to contextualize the processes that brought about its conception, be they natural, economic, social, and political.

In the 1970's a sub-discipline of ecology, urban ecology, emerged as a way to study the anthropogenic effects on urban and urbanizing landscapes (Ramyar et al., 2021). For many urban ecologists, the question of their study and practice is: how do both urban and natural systems coexist, and how do they influence each other? (Alberti, 2008; Desfor and Velason, 2008; Ramyar et al., 2021). Through these questions it becomes clear that any nature or natural space that is produced through the processes of urbanization must be considered in relation to the social forces at play (Heynen et al., 2006). On this topic Swyngedouw (1996, p. 66) has argued that the city is a hybrid of the social and the natural, that within the city the urban includes a diverse array of interconnected processes that are "both human and natural, real and fictional, mechanical and organic. In today's world the highly engineered urban landscapes of cities encompass the larger regional natural landscapes. Understanding infrastructure to be in a mediating role between nature and city has been recognized as contributing to an essential examination of the socio-ecological sustainability of the urban environment (De Block, 2016; Heynen et al., 2006; Kaika, 2005). For the Port Lands project, the mouth of the river will be completely rebuilt yet again, only this time the designs for the mouth of the Don are taking cues from the natural hydrologic processes of river and water networks and offering new points of connection between the public and the localized natural systems (Toronto, 2017a). The end results is an engineered and highly managed area of natural systems processing that reflects an aesthetic of the wild.

The new mouth of the Don River will be buffered with extensive plantings, constructed natural habitats and wetlands, and public connection and recreation points (Toronto, 2017a). The naturalized Don River will become a working nature, an engineered blue-green infrastructure, and a socio-natural space where the public can connect with the more-than-human. This huge transformation occurring on Toronto's waterfront, which the Port Lands

project is responsible for, represents an assemblage of social and material discourses expressed at multiple scales and dimensions (Swyngedouw, 1996; Heynen et al., 2006; Kadfak and Knutsson, 2017). The designs for the reconfigured river call us back to an imagined historic landscape, while also projecting us into an adaptive future under climate change (Toronto, 2017a). The location of the project will connect the public to the larger regional landscape, the mouth of the Don River on Lake Ontario, part of the Oak Ridge's Moraine watershed, within the Greater Golden Horseshoe, in Southern Ontario. The Don River and Valley act as regional links, embodying grand landscape scales at a local axis on Toronto's waterfront. Desfor and Velason (2008 p. 2), in reference to the Port Lands, point out the multiple dimensions of influence on the Port Lands, local "political and economic interests, their discursive representations of nature, and urban development processes are intertwined in the production of industrial nature in the form of 'new' land made available for development."

Nature, here, is not only the physical manifestation of our world and the interconnected systems of life and stasis but is also a collective understanding and imaginary. Our ideologies of nature have a much larger effect on the physical landscape than it may initially appear (Cadieux and Taylor, 2012). Bridging the ideological space between ourselves and how we understand and relate to nature will be an important transformation in how we urbanize in the twenty-first century. As Colding et al. notes, "the transformative potential of deliberate interventions in how humans relate to nature is a crux of future sustainable societies." (Colding et al., 2020). The Port Lands project explores and extends this relation through green and blue/green infrastructures. The location of the Port Lands project and the implications of the landscape transformations offer new potential points of connection for the public and the more-than-human communities. As obvious as a river and a waterfront may be, the experience of landscape is essential in creating a local ideology of nature. Within the larger context of climate change, this connection between the public and the natural landscape form is what may offer this 'transformative potential'. The Port Lands Planning Framework offers a look into what the contemporary understanding of the "good community" is for the planners, consultants, and urban designers that worked on the Port Lands (Grant, 2005).

The Ideological Context: Climate Change and the Port Lands

Contemporary understandings of climate change within grey literature as well as academia link the processes of climate change and anthropogenic impacts to the systems of the capitalist economy. Luke (2015) in their writing on the climate change imaginary, states that “The nature of capitalist exchange itself for an urbanized planet is the ultimate cause of global climate change.” (p. 288). The linking of climate change to capitalism and urban processes, it is commonplace for academics to have a clear cause and effect perspective of climate change. Urban processes, industrialization, and the disposition of urban elites and capitalists to seek exponential growth has led us to where we are now, experiencing the beginning of intense climactic effects on our world’s infrastructure, food, and health systems (IPCC, 2021). Matlock and Lipsman (2020) contend that “Existing social and economic forms that pursue growth have brought about climate change, and the work of local governance (including planning) often reproduces the status quo of environmental degradation” (p. 570). Within my research I approach the issue of climate change from the perspective of a planner, currently a planning student. For me here, climate change issues bear the question of, how can planners enact change in communities when planning is part of the capitalist system dependent on funding from developers? How can the processes of city and community-building create opportunities for life outside the paradigm of exponential growth? Here, I understand urbanization and climate change effects existing as part of the same inescapable future, one of bigger and more dense cities, under heavier climactic and resource pressures than ever before.

Climate change as I understand it here, is not simply a process that is occurring, but it is also a term that encompasses ideological shifts. In this sense climate change cannot be understood from only one perspective or approach but must be seen as the sum of many parts. While climate change is on the one hand a series of very real and scary processes, it is also a socially constructed idea. Ideologies of nature and climate change are inexorably linked, damages done to one are driving the processes of the other.

The shifting landscape of the post-industrial Western world brings with it opportunities to renew and renaturalize landscapes that have previously been contaminated and polluted (Angelo, 2021). Through this research I view former urban industrial landscapes in a similar way to how the countryside has been viewed by environmental planners and academics, as undergoing the transformation “from spaces of production to spaces of consumption” (Sandberg et al., 2013 p. 198). The Port Lands in Toronto is becoming a hybrid place where Port activities will continue but the built environment presents the industrial activity as entertainment (Toronto, 2017a). The natural areas of the future Port Lands are intended to be for consumption as part of the public realm and recreation.

Though Matlock and Lipsman (2020) reference the great ecological damage that has occurred through urbanization processes, projects like the Port Lands in Toronto tell a story of hope and beauty, of nature and city existing within the same spaces. The Port Lands project is attempting to create new kinds of places, where blue-green infrastructure is an integral part of the public realm. These new spaces bring novel points of connection and relationality with nature through the interaction with and consumption of the space (Robertson, 2018).

For new urban community building, much of the character-based framing is proposed to create feelings of local identity. Within the Port Lands framework this local identity is created through the public’s interaction with the landscape. The Port Lands is being designed and planned for the public as an experience and connection, while for the planners at the TRCA, the City of Toronto, and Waterfront Toronto, landscape as infrastructure is the priority. Only after flood protection occurs can other types of investment take place. For new developments relying on adaptive infrastructure, the onus is on the guarantee of flood and climatic risk protection. Higher level transportation and commercial infrastructure can only responsibly occur after the climate change adaptive protection is complete. These understandings and risk assessments are bringing with them new considerations into how we (urban planners and designers) are incorporating green infrastructure and urban natures into plans for protection against climate risks. The question is not only what will our rivers look like in the future, but what will they do under pressure in more intense weather events? Angelo (2021) argues that planners and scholars must break with the notion that we (humans) are dominant over nature,

and that as climate change advances, these illusions of domination become “ever more untenable” (p. 205). The Port Lands project cannot be separated from either landscape nor climate change, both are essential to the future of the area’s success and sustainability.

Given the essentiality of the landscape to this project and the future make-up of this portion of Toronto’s waterfront, landscape within the context of the Port Lands is more than material/ physical, it carries with it an essential ideological dimension. Vincenzotti (2017), in their analysis and critique of the vernacular of landscape urbanism contend that “landscape is a *hybrid object* in a concrete sense: an assemblage of material, factually given elements of varying nature or origin-cultural and technological as well as natural.” (p, 78). The intersections of the natural/cultural/technological elements are on full display within the plans for the future of the Port Lands (Toronto, 2017a). The *imagined* future of this area is what has really shaped both the physical and economic/productive contexts of the Port Lands. As Nichol has argued, the area of the Port Lands has been historically shaped based on the needs of the city (2016). In the case of the Port Lands, climate change and landscape are together directing development, climate change forces city planners and designers to consider the range of the Don River’s waters, while the Lake Ontario waterfront of the Port Lands landscape and the new River Mouth are quite literally defining the boundaries of the future communities.

How does the field of planning include the natural landscape as part of climate change strategies? How do planners plan for the climate context?

What is the role of planners in shaping the everyday and bracing for the future? What kind of future do we as society envision? Part of planning as an academic field includes exercises of futurisms and projections of future cities and communities. While this may include ideas of a utopian future as a destination, it is important to envision the kind of world we would want to live in. If we do not imagine a good future, it is impossible to see the steps to get there. One of the problems with this is that the bulk of our projected futurisms rely heavily on the aesthetics and desires of the past (Angelo, 2021).

When we look at the state of planning today, we can see the vestiges of the planning movements of the late nineteenth and twentieth centuries mentioned above. The sprawling parks and lawned surfaces recalling the English ideal of the countryside as well as the Garden City movement. When we look at current terms like ‘complete communities’ and ‘resilient communities’ we see the influences of New Urbanism in the plans for compact city streets, walkable communities, and mixed used land planning. The complete communities of New Urbanism reflecting the same values and objectives of the resiliency of climate change adaptation and mitigation strategies. We can also see the influences of both regional environmental planning and landscape urbanism. Regionally, in Ontario, the Conservation Authorities have jurisdiction over watersheds and natural hazards slopes, meaning that the watersheds and valley slopes can be managed at a higher level, understanding that it is the same water crossing municipal lines, flowing from upstream to downstream. Patrick Geddes (1949), a Scottish geographer and the “father” of regional planning, argues in *Cities in Evolution*, that with the preservation of natural heritage features must also be the provision of access to these natures for the well-being of city dwellers. For Geddes (1949), the preservation of natural features for the beauty and health of cities is more than just urban design and planning, it is *landscape making*.

Landscape urbanism, on the other hand, lets us see how whole landscapes and waterfronts can be built and rebuilt, and how landscape can be used to shape place, experience, and space (Vicenzotti, 2017). Landscapes can be engineered and heavily managed, and risks posed by natural features mitigated, all while maintaining a narrative of place, character, and identity (Corner, 1996). On Toronto’s Waterfront at the Port Lands is a public sphere that is shaped by both natural landscape as well as industry and production, the stories of both are interwoven to create a narrative and shape the experience of place (Toronto, 2017a). The ideology of landscape and place corresponds heavily with local identity and experience. As Corner (2006) has stated in his work, “Public spaces are firstly the containers of collective memory and desire, and secondly they are the places for geographic and social imaginary to extend new relationships and sets of possibility” (pp. 33). For the Port Lands development, the Planning Framework published by Waterfront Toronto tells the story of an

evolving place, a space of marginality coming into its full potential. The Planning Framework of the Port Lands is an expression of potentials, the potential for the enhancement of a River and its natural systems, the potential to develop, and the potential to gain.

A major focus of planners and scholars on the topic of adaptation to climate change is that of green infrastructure. As mentioned above, Hough thought of natural features, like rivers and valleys as green infrastructure, and my research here agrees with this conclusion. More frequently now, scholars and academics are pointing to green infrastructure as an important strategy of adapting cities to climate change (see Carter et al., 2018; Sturiale and Scuderi, 2019; and Ramyar et al., 2021). The Don River is already under severe pressure as it is one of the most urbanized rivers in Canada (TRCA, 2017). Urban green infrastructure, such as the Don River and its valley lands and outlets into Lake Ontario, are going to be key components of urban resiliency under the context of climate change (Toronto, 2021). While some scholars and practitioners have relied heavily on the concept of ecosystem services (Ramyar et al., 2021), others, including myself, question the need to assign capitalist models of value onto natural systems and their functions/existence. The inherent value of the natural world and natural landscapes needs to be promoted if we are to step away from the domineering relationship between humans (cities) and nature of the past.

The TRCA's climate outlook for Toronto expects significant changes to temperature and precipitation patterns, including hotter summers with more heat waves and droughts, warmer winters with less snow and more rain, the disappearance of the spring melt, and an increase in extreme weather events (2014). Green infrastructure, like a naturalized Don River and River mouth will enhance the quality of life for the local communities while also providing greater resilience to the impacts of urbanization and climate change (TRCA, 2014). Renaturalizing and restoring natural features on former industrial sites represents an important step in reducing the ecological harms of urbanization and development (Hough, 2004). As processes of urbanization and sprawl continue, the idea of urban land scarcity will likely lead to the development of many post-industrial areas that have been captured by the "underuse" of vacancy (Toronto, 2017a; Foster, 2014).

IV. Toronto's Port Lands

a. History of the Area

This study focuses on Toronto's Port Lands. This chapter briefly reviews the general history of the area, the Don River, and its associated Valley, as it is a key feature within the study area, cutting through the landscape and emptying into Lake Ontario. The river, its position on Lake Ontario, and its effects on the landscape have shaped the surrounding development through the river's habit, unpredictable temperament, and various health transformations. The area of Toronto known as the Port Lands sits at the mouth of the Don River emptying into Lake Ontario and was once the historic site of Ashbridge's Bay. Though the area is currently paved and filled, it was once one of the largest freshwater marshes in eastern North America (TRCA, 2021). The marsh featured a large marsh, wetland, and lagoon with a meandering river travelling north from Lake Ontario (Bonnell, 2010, 2014). The area where Toronto and the Port Lands are now located was an important place of seasonal and fluctuating habitation of several Indigenous nations previous and concurrent with European settlement. Beginning in the 1600's, European settlement by French and British colonizers brought with it new imaginations for the landscape of the Don.

Throughout the 1880's there was an increase in the number of hunters, fishers, and trappers who were settling cottages and camps near the mouth of the Don (Bonnell, 2010). The area was known to support rich plant and animal diversity and was an important place to observe, record, and classify rare birds (Desfor and Velason, 2008). Through the 19th century, the Don River Valley and the surrounding areas were increasingly affected by colonial processes of settlement, displacement, and resource exploitation, all of which had negative effects on the features and processes of the lower Don River (Bonnell, 2014, Cadieux et al., Nichol, 2016). Woodland resource extraction and land clearing for construction and agriculture in the area lead to valley and soil erosion, furthering the flow and silting issues already experienced at the mouth of the Don (Bonnell, 2014). Agriculture was attempted to be established by settlers further north along the Don, but poor soils, steep ravines, and unpredictable river ecology became insurmountable barriers to these land uses (Bonnell, 2014).

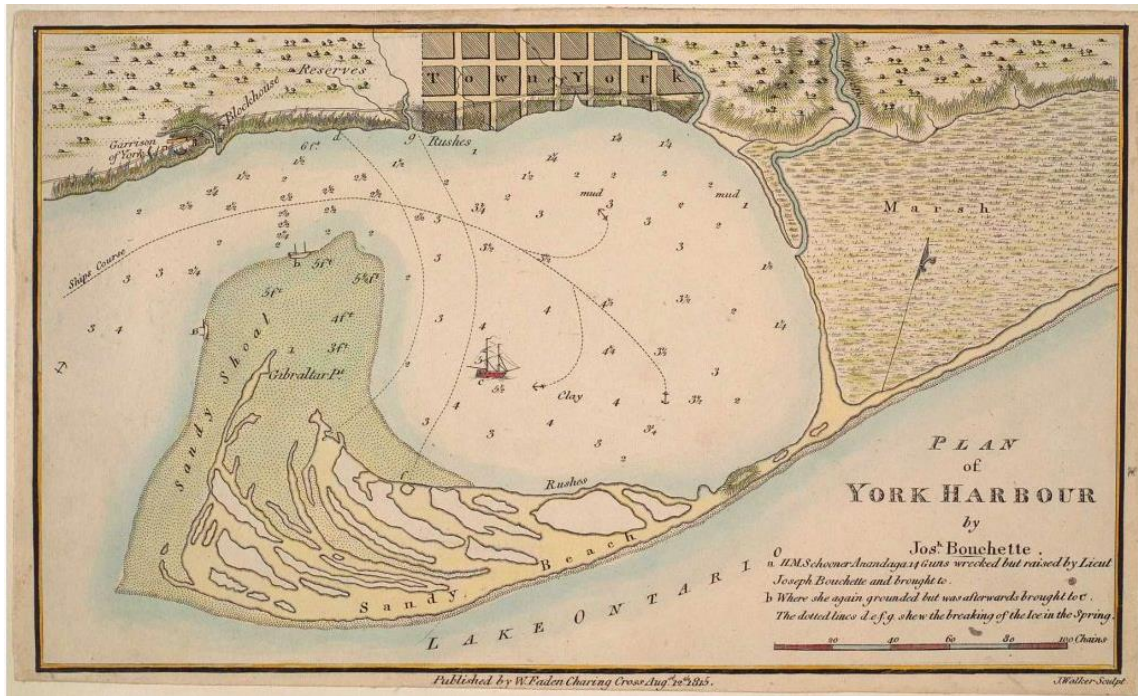


Figure 4. Map displaying the Town of York, Don River, and Ashbridge's Bay Marsh, as well as the sand bars and Gibraltar Point Image courtesy of Tommythompsonpark.ca.

The pre-industrial lower Don River had become associated with danger and unhealthiness and was viewed as a place to “fear and avoid” (Nichol, 2016 p. 31), posing threats of danger and disease. As colonial visions of an agricultural valley were eroded and rail connectivity expanded to the area, the imagined future of the Don had become one of industrial development and was used for municipal and industrial waste disposal (Bonnell, 2014; Nichol, 2016). As an industrial and waste corridor, the ecological health of the Don further diminished, and the river lost most of its ability to filter pollutants. The river had become yellow-green with a “slimy, soup-like consistency” (Bonnell, 2014 p. 37). Early interventions to mitigate pollution, flooding, and disease at Ashbridge’s Bay were largely unsuccessful. Actions to redirect sediment accumulation inadvertently reduced river flow and the filtering capacities of the wetlands, creating stagnant waters that furthered the health risks of the area (Bonnell, 2014; Nichol, 2016). The Don Improvement Project (DIP) was created in the mid 1880’s to remedy the problems of pollution, disease, flooding, and silt accumulation at the mouth of the Don (Bonnell, 2014). The main objectives of the DIP were “(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 in to the city, and 4) to create new lands for industrial purposes. Flood control was considered an associated benefit” (Bonnell, 2014, p. 55). Huge changes to the Don River mouth landscape began as breakwaters were built in the 1870’s and the Keating Channel was built along the northern edge of the marsh in the late 1890’s (City of Toronto, 2017). The southern portions of the Don were straightened, widened, and deepened while the political economic context of the late nineteenth century in Toronto dictated expansion to industry and production in the area (Nichol, 2016; Bonnell, 2014; Reeves, 1992). The marshes were filled to create the port lands and the Don River mouth was put to a right angle, signifying the establishment of the hard landscape the Port Lands have come to be known for.

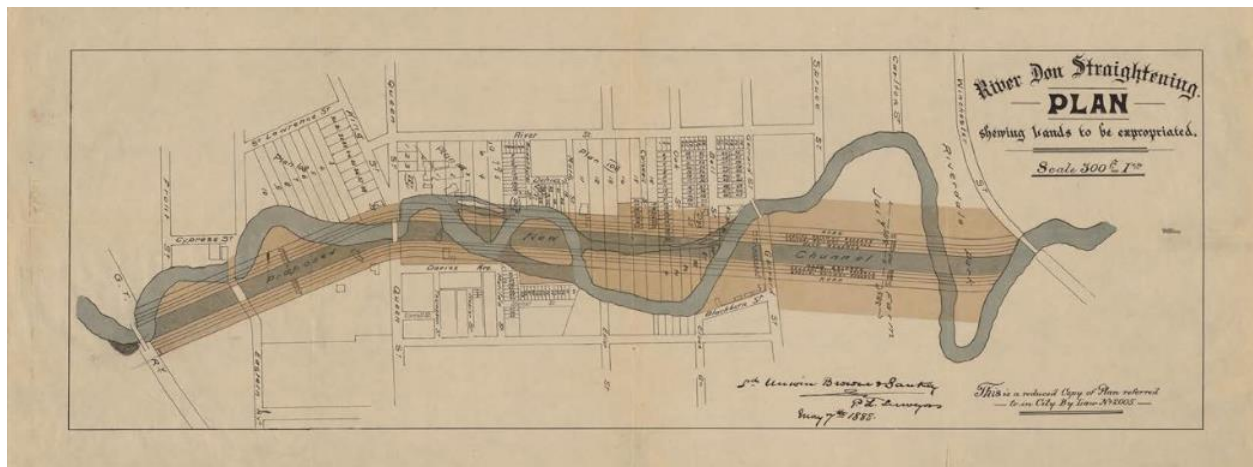


Figure 5. River Don Straightening Plan, 1888. Image courtesy of City of Toronto Archives, Series 725, File 12.

By the mid-twentieth century, the area was largely unwelcoming and made more difficult to access by the Don Valley Parkway- inhibiting entry for pedestrians and cyclists (Hough, 2004). In the late 1950’s the Leslie Spit was built south-east of the Port Lands as a break water to support what was expected to be a bustling Port industry on Toronto’s waterfront (CBC, 2020). This Port Industry failed to materialize on the scale that the City of Toronto and the Toronto Harbour Commission had expected. The Leslie Spit, perhaps unexpectedly, later became an important place of urban wilderness in Toronto. The Leslie Spit currently provides important habitat to flora and fauna, existing as an urban bird sanctuary (Tommythompson.ca). This persistence of the more-than-human landscape at the Don River Mouth recalls the regional and historical legacies as an important bird landing area for

migratory birds on the northern shores of Lake Ontario (Seton, 1940, Desfor and Velason, 2008).

The cultural legacy of industry in the Port Lands connects us (the public) to the larger history of expansion, development, and industry in Toronto. The subtext of the Port Lands story includes the narrative of a city and a landscape under human control but lacking in understanding and management (Nichol, 2016). During the late nineteenth century there was little understanding of river hydrology and ecological processes (TRCA, 2017). Human efforts to tame the Don were met with extensive natural resistance, the continued silting, flooding, and polluting of the river are stark displays of this. The Don was and is expected to continue to be both a resource as well as a source of destruction. The Port Lands plans detail this expectation while also connecting it to the forces and unpredictability that will come with a future under the climate change context. Engineering the new river mouth with an expectation of unpredictability and fluctuation is the strength of the Port Lands project design.

In 2004, the TRCA began the process of studying ways to renaturalize the Don River mouth and provide flood protection through the Don Mouth Naturalization and Port Lands Flood Protection Environmental Assessment (Cadieux et al., 2019). In 2007 a design competition was held by Waterfront Toronto to produce a vision for the Lower Don Lands that would merge the urban and natural fabric and develop a new kind of neighbourhood that interacts with the Don River and Lake Ontario in a dynamic and balanced way (Cadieux et al., 2019) Michael Valkenburgh Associates Inc. won this design competition with a proposal that outlined an integrated approach to reclaim the underused Port Lands (Cadieux et al., 2019)

b. Project Description and Current Status

In 2017 Waterfront Toronto received \$1.25 Billion in funding from the three levels of government (Municipal, Provincial, and Federal) to complete the Port Lands flood protection project. Waterfront Toronto, after receiving the funding, outlined the outcomes of the project saying that the undertaking will “flood protect the Port Lands and build the necessary infrastructure to unlock the area’s potential for new neighbourhoods and employment areas.”

(Toronto, 2017a). The project consists of 325 hectares of land, to the west is the Inner Harbour, to the north is Keating Channel and Lakeshore Boulevard East, Leslie Street is to the east, and Unwin Avenue sits as a connection to Tommy Thompson Park to the south (Toronto, 2017a). The Planning Framework and project apply to four areas, the Lower Don Lands, the Film Studio District, East Port, and the South Ship Channel (Toronto, 2017a). Most of the lands in the Port Lands are owned by the Toronto Port Lands Company (TPLC), a City of Toronto corporation that manages real estate assets and promotes development in the area (Toronto.ca, 2022). The Port Lands flood protection plan and the renaturalization of the Don River are part of a massive transformative development. The Port Lands Flood Protection as well as other Don River floodplain protection projects have had to be done in steps to mitigate risks and hazards (Toronto, 2017a, S. Heuchert, personal communications, April 6, 2022), the unlocking of the floodplain occurring in successional steps.

Waterfront Toronto claims that the area is “one of the largest underdeveloped stretches of downtown waterfront in North America” (2022). The Port Lands, Waterfront Toronto’s website claims, have not been able to become a thriving part of Toronto because of the contaminated soils and flood risks associated with the lands (2022). The plans involve rerouting the Don River mouth with a new softer angle, more natural curving lines, and a naturalized river valley with riparian habitat. Villiers Island, the prospective climate positive community, will be created by the digging of the new river valley and mouth. The project also includes the creation of the Don Greenway, a secondary outlet for the Don River (Waterfront Toronto, 2022). The Don Greenway will be an added spillway during heavy rain and flood events, water flowing through its marshes and wetlands into the Shipping Channel to the south. The waters of the Don Greenway’s wetlands are designed to be sustained by the Shipping Channel waters during normal conditions (Waterfront Toronto, 2022). The Port Lands project will restore polluted land, build new roads, infrastructure, public trails, and parkland. The project seems to fit perfectly with Corner’s (2006 p. 24) idea that “landscape *drives* the process of city building”. Functional river and wetland hydrology, designed beyond the one-hundred-year flood event (S. Heuchert, personal communication, April 6th, 2022) will finally allow the Port Lands area to reach its urban potential. The designs for the future Port Lands include mixed-use communities,

a “mid-rise core”, work and warehouse (employment) areas, and an outer edge (Toronto, 2017a p. 270).



Figure 6. A rendering of the new Don River mouth and Don spillway showing Villiers Island and the new naturalized areas. Image courtesy of Waterfront Toronto

The Port Lands project is employing many nature-based solutions for issues that are driven and worsened by climate change and urbanization. The riverbanks of the new naturalized Don River are to be planted with appropriate native riparian and wetland flora. Fish habitat is being created and the problem of shore erosion is being avoided by using stone anchor walls or massive tree stumps with intact root balls and placing the trunks towards the inland (Waterfront Toronto, 2022). The underwater root balls are planned to become fish habitat. The constructed habitats of the river and buffers will include bird boxes, osprey platforms, the anchored wood mentioned above, as well as turtle and fish habitats. The project includes several wetland areas, marshes, and upland forest within the floodplain (Van Valkenburgh & Associates, Inc., 2018). The Port Lands green and naturalized spaces will be linked by trails and public activation and recreation spaces. The Don River defines the landscape, providing focal points for blue-green infrastructure buffered by naturalized riparian habitats and other green spaces (Toronto, 2017a; Val Valkenburgh & Associates, Inc., 2018). The writers of the Port Lands Planning Framework (Waterfront Toronto and City of Toronto

planners) suggest that with the Port Lands comes an opportunity to open-up dialogue about an expanded public realm (CH3, 2017a). Chapter 3 of the Port Lands Planning Framework (2017 p. 53) states that “This realm is not just green, but blue and green. Our perception can be shifted to see the waterways, integral to the very fabric of the Port Lands, as bringing promise of an entirely new open space experience.” This shift in perception of what public nature spaces can be and look like marks an important feature for the future of the Port Lands. Activating a waterfront that has been historically isolated from pedestrians offers essential opportunities for people to connect with the area’s landscape and the more-than-human aspects.



Figure 7. A photo of construction crew members setting tree trunks and root balls into new Don River shore. Image courtesy of Waterfront Toronto.

Connecting the future of the Port Lands to the industrial history of the site is another defining factor within the Port Lands Planning Framework. The plans and recommendations for the Port Lands community include ideas of adaptive reuse of historic and industrial buildings.

The industrial architecture of the area lends itself to the potential of creating unique community hubs and activation points, connecting the public to the industrial cultural heritage as well as the natural ecologies and hydrologic systems where the Don River meets with Lake Ontario. Villiers Island, which will emerge as the new river mouth takes shape, is “envisioned as a sustainable urban community in the midst of the big city” (Toronto, 2017a p. 67). The imagined future of the Port Lands that the planning framework outlines is of a pristine sustainable destination, framed with the benevolence of greening. The perceived goodness of this vision is based on historic understandings of what urban greening should look like while incorporating the adaptive qualities necessary for life under the climate change context (Toronto, 2017a; Angelo, 2021). This pattern follows the same cycle of projected futurisms for the area, as Bonnell (2014 p. xxi) contends in her book “Imagined futures for the Don River Valley as an agent of growth and revitalization for the city as a whole created the landscape we live with today.” In the current case of the Port Lands, the development we are seeing is yet again part of a larger work to revitalize Toronto’s waterfront, as well as being an important piece in the puzzle of waterfront flood protection (Barter, 2022).

As the development stands while I write this, much of the new riverbed has been dug and capped with clean soil and artificial membranes to keep any chemicals leaking out from contaminated soil below. New habitats are being dug in canoe cove at the current Polson Slip, creating fish and amphibian habitats as well as points for the public to connect and interact with the water and natural landscape (social media post, Waterfront Toronto, 2022). The new Cherry Street bridge has been placed and soon the old Cherry Street will close in preparation for the new Cherry Street to open. Over the winter of 2021 – 2022 there were huge piles of soil packed against concrete blocks lining Cherry Street. The soil being excavated for the new river waiting in line to be remediated. The soil out of which the new landscape is being excavated has been historically contaminated, and this project aims to remediate and reuse approximately 90% of the existing soil (Gombos, 2022). While this project deals in the realms of projected futurisms and ideologies of nature, it is also a very real making and re-making of landscape. As a nice surprise to all some old seeds have sprouted, estimated to be around one hundred years old (Marfo, 2022). The plants are apparently from seeds that were in the original

Ashbridge's Marsh that was filled-in to create the Port Lands over one hundred years ago (Marfo, 2022). The seeds are now being studied by a team of researchers at the University of Toronto (Marfo, 2022, Sasaki, 2022).



Figure 8. Image showing workers transplanting wetland plants thought to be sprouted from seeds that had been buried over 100 years ago. Image courtesy of waterfrontoronto.ca

c. Policy Context for Toronto's Port Lands: Shaping development through policy.

In Ontario there are several policies coming from multiple levels of governance which are relevant and intersect with the planning, design and direction of natural heritage systems planning, climate change planning, and the creation of new communities, parks, and public realm spaces. It is important to review the policies and plans relevant to the different dimensions of the Port Lands in order to see the influence policies have on the development envelope and urban landscape. Policies inform development direction, function, and form, including the treatment of water resources and natural heritage. The Don River and the transformations it has undergone exist as a socio-nature, the mouth of the river and the

surrounding landscape has been produced through both natural processes and social practices (Desfor and Vesalon, 2008). The following is an overview of some of the plans and policies that are relevant to the Port Lands flood protection and Don River mouth renaturalization project. Through reviewing the applicable policies, the overarching direction for development becomes clear. While the Port Lands project from a superficial perspective appears to be the epitome of innovation, climate resilience and sustainability, it is very much a product of applicable policies, local cultural ideologies, and the socio-historical context.

The Provincial Policy Statement (PPS) (2020) of Ontario provides policy direction and the foundations for regulating the development and use of lands that are of provincial interest. Section 1.1.3 of the statement sets the foundations for growth in settlement areas of Ontario, (which the Port Lands and Toronto would fall under). The statement outlines the basic parameters for land use patterns in settlement areas which includes the efficient use of land and resources, the appropriateness of developments, minimizing negative impacts to air quality and climate change, preparing for the effects of a changing climate, supporting active transport and public transit, etc. (PPS, 2020 p. 8). For Natural Heritage, 2.1, the PPS sets out that natural features shall be protected for the long term (2.1.1), that diversity, connectivity and the long-term function and biodiversity of natural heritage systems “should be maintained, restored or, where possible, improved” (2020 p. 24).

The A Place to Grow Growth Plan for the Greater Golden Horseshoe (2020) addresses the challenges of accelerated growth in Ontario’s Greater Golden Horseshoe (GGH) region. The Growth Plan for the GGH acknowledges the difficulties of unmanaged growth, the processes of globalization, and the effects of climate change amongst other challenges. Growth Plan (2020) states “The impacts of a changing climate are already being felt. Communities and *infrastructure* must be adapted to be more resilient, greenhouse gas emissions across all sectors of the economy need to be reduced, and valuable water resources and natural areas need to be protected.” (p. 3). One of the actions put forth by the Growth Plan for municipalities to include in their policies is providing direction that supports a *culture of conservation* (2020, p. 52).

A Made in Ontario Plan for the Environment (2018) is the Provincial guiding document for climate change and environmental strategies. While this document in 2018 outlined some ambitious goals and programs for reducing Ontario’s carbon emissions, in 2022 the Provincial Conservative government scaled back many of the targets and programs initially proposed (Crawley, 2022). Ontario’s emission forecast is still expected to meet the 2030 targets, but much of the emission reduction has already occurred previous to this conservative government being in power (Crawley, 2022).

Toronto’s Official Plan (OP) (2021, p. 1) outlines how Toronto plans to grow and shape itself as a “successful city”. Chapter One of the OP states that “Building a successful Toronto means that we have to make sustainable choices about how we grow. We have to see connections and understand the consequences of our choices.” (2021, p. 1-2). In the Port Lands, the specific needs of the area and the existing green spaces within the Port Lands areas as well as adjacent green areas, represent unique challenges in the ways of development pressures. For the Port Lands, development, and natural heritage renaturalization and water protection come as parallel goals. Only through the renaturalization process and the flood protection can high density development occur in the Port Lands (Toronto, 2017a).

Toronto’s Central Waterfront Secondary Plan (CWSP) corresponds to the continuous waterfront renewal process. The principles of the CWSP act as a framework for the renewal process and are planned to be central to Toronto’s waterfronts evolution for the coming decades (2019 p. 4). Under Principal C – Promoting a clean and green environment, Policy 26 states that the Central Waterfront will be a “model of leading-edge environmental technologies.” (2019 p. 12). The CWSP goes on to promote the Port Lands as Toronto’s “springboard to the future”, a place where “‘green’ industries can be incubated and thrive” (2019 p. 12). The CWSP continues to describe the massing and general desired character of the future Port Lands communities and at a high level describes the massing, scale, and diversity of uses intended for the new neighbourhoods.

The Toronto and Region Conservation Authority (TRCA) created the Living City Policies (LCP) to provide a guide for the TRCA in its review of development applications and environmental assessments (2014). The LCP also informs the TRCA’s advocacy role in Planning

and development. Within the LCPs (2014) is the statement that the “TRCA works from the perspective that natural processes contribute to the physical form of cities and neighbourhoods; and that the development of urban areas influences and affects the health and ecological integrity of natural systems – that cities are part of, not separate from, nature.” The policies echo this sentiment, continuing to state in section 5.5, Principle 2, that “The design of communities should foster the interdependent relationship between humans and the environment to promote a culture of conservation” (2014 p. 37). This is in parallel with the Growth Plan for the GGH’s objectives of promoting a culture of conservation within Ontario (2020). The TRCA, through the LCPs emphasized the role of management side of the policy regime, as the focus can be placed on “lands to be developed, or redeveloped, and how their design can help maintain, restore and enhance the features and functions of the Natural System as well as contribute their own share of ecosystem services” (2014 p. 61).

On November 9th, 2021, Toronto City Council carried a motion, moved by Councillor Ana Bailão, as part of the On Affordable housing portion of the Next Phase of Waterfront Revitalization. The Motion to Amend Item (Additional) is to work to realise a “level of affordable housing that exceeds the minimum requirements set out in the Port Lands Planning Framework in any revised or new Precinct Plans, Zoning By-Laws and Business and Implementation Plans that are considered for Villiers Island and for other Port Lands precinct.” (City of Toronto, 2021).

By analyzing these Plans and policies it becomes clear that policies can be powerful planning tools in leading development towards more sustainable outcomes. More prescriptive policies can help regulate the effects of urbanization on our natural systems. Focussing on outcomes rather than the processes to reach those outcomes can allow designers and engineers more creative freedom to innovate (Waterfrontoronto.ca). It is important to remember that the purpose of developers is to make money, not necessarily to create great or sustainable cities. Policies and projected outcomes can ensure that natural system protection and enhancement occurs and that development outcomes not weigh heavily on our ecosystems and resources.

- d. How is this development including climate change strategies? What is the story the planning framework is telling?

“The form of the city is the consequence of a constant evolutionary process fuelled by economic, political, demographic and social change; of new buildings replacing old and old buildings being adapted to new uses, of urban decay and renewal”. (Hough, 2004 p. 20).

As Hough expressed so well, the city is an ever-changing beast, one reliant on the money of development and industry, while putting its residents under the constant pressure to produce (2004). Toronto’s contemporary moment sits at the crossroads of a housing crisis, the highest inflation rates in over 30 years, and the climate crisis; and yet the city chugs along as if not on the brink of catastrophe (Evans, 2022). The Don River and its watershed, traversing Toronto’s Central-East is one of the most urbanized watersheds in Canada (TRCA, 2022). As expressed above, the Don River and the Port Lands themselves have long been portrayed as anti-destinations, places that are misused and disused, Hough himself calling the Don Valley “a gap between places rather than a place in itself” (2004: 42). Even now as the Port Lands accommodates 5500 working in the area and the ports themselves and bringing in two million metric tonnes of shipments in 2020, the area is almost exclusively called “underused”, or “underutilized” in the Waterfront Toronto documents and media articles on the subject (Evans, 2022, Waterfront Toronto, Ch2, 2017). As vacancy is not a viable urban land use planning strategy or objective, the overarching narrative being told through the Port Lands Planning Framework frames the industrial past as being wrong and the green aesthetic of the future as being right (Foster, 2014; Angelo, 2021). And while I agree that the promise of a greener vista, and a healthier river is certainly an appealing one, I also wonder if processes of this development have not succumbed to the strategy of greening as marketability. While the plans for the Don River are both comprehensive and massive, the project must also be sold to the city, to developers, and to the public.



Figure 9. An artist's rendering of the future Port Lands Promontory Park and Canoe Cove. Image courtesy of Waterfront Toronto.

In Section 2 of The Port Lands Planning Framework (2017a), the Port Lands development is framed as a conduit between the city's hard edge to the north and the urban wilderness of Tommy Thompson Park to the south all while grounding the community in its larger context. In this the framework is explicit, stating "the Port Lands transformation will bridge the divide between the urban and natural landscapes, and restore the Port Lands geological roots as the mouth of the Don River" (2017a p.24). The Port Lands Planning Framework continues the narrative of connecting the 'urban' with the 'natural', in Chapter 3-Vision, the framework declares "This urban and natural duality is also a key defining element in the Port Lands ... The vision for the Port Lands builds on this duality." (Toronto, 2017a, CH3 p. 38). Building on the duality of urbanity and wilderness set against the context of climate change, the development and renaturalization of the Port Lands is ushering in a narrative of a new relationship between downtown urban living and natural systems such as the Don River. My question here is whether climate change is pushing this relationship to new terms and boundaries.

In several sections of the Port Lands planning framework as well as in webinars and presentations on the Port Lands project, the development is bolstered as a 'champion', and 'signal', a beacon of innovation and sustainability (Toronto, 2017a). In section 4.9 -Innovation and Sustainability, the framework presents the directions of the projects and the sustainability

approach as being able to “champion a better environment for the city and region” (Toronto, 2017a). In my interview with Aaron Barter, director of innovation and sustainability at Waterfront Toronto, we talk about how the Port Lands development has embedded a new set of *green* requirements which reduce the operational carbon requirements of buildings and major structural components in accordance with the Canada green building council’s carbon building methodology (A. Barter, personal communication, April 12, 2022). Barter goes on to say:

“So that [the new requirements], I think has been a major step forward in terms of advancing the state of climate change planning and new development on the waterfront, and I think is also helping to inform broader policy changes that are happening citywide with the Toronto Green standard. And, I think, even more broadly than in Toronto we’re seeing updates to codes and standards that are prioritizing climate related decision making within the design of new buildings.”

(A. Barter, personal communication, April 12, 2022).

Cities have widely been viewed as having a key role in climate change governance, though it is important to remember they are still embedded in a broader multi-level state system and political context (Keil, 2020; van der Heijen et al., 2019). Community planning, though at a smaller scale than city-wide planning, is still intertwined with the challenges and advantages of developing at the city scale. Developing for climate change at the community scale allows for the details of adaptive and resilient features to be of greater focus, and for the experiences of everyday living to include local understandings of the landscape context. In the Port Lands development, the key feature of the project and the axis on which the success of the project depends, is the flood protection of the mouth of the Don. In this case, climate change and the associated threats of flooding are the hazards that the land needs to be protected from. As said elsewhere in this paper, this flood protection is the unlocking of the land here, allowing the land value in the Port Lands area to go from approximately \$2 million/acre to over \$35 million/acre (Gombos, 2022). Scale is an important aspect of future planning with climate

change, as climate change works in feedback loops set at different scales, the intersections of climate, environment, and governance are many.

Notably, the mentions of climate change throughout the Port Lands Planning Framework are for the most part, kept to the ad hoc climate change chapters, within much of the framework, 'sustainability', 'resilience', and 'adaptive' are placeholders for climate change terms and strategies. The strategic placement of the term climate change and its sequestration to its purposeful chapters and sections helps keep the projected future of the Port Lands unsullied by the fear and risk inherent in climate change implications. Through the Port Lands planning framework, sustainability and resilience speak to a positive future without all the existential dread that naming climate change directly carries with it. By placing the direct expressions of the climate change context strategically, the carrying story of the future that the Port Lands Framework tells is a positive future destination instead of one of fear and scarcity. In my interview with See-Yin Lam, a landscape architect who worked on public realm aspects of the PL project, she described public realm aspects of the PL project as deviating from typical representations of urban green spaces (S.Y. Lim, personal communication, May 5, 2022). The Port Lands, and in particular the Don Greenway, are designed to impart connections to nature that are not dependent on the pristine and manicured style of the garden city movement, but instead are designed to be more wild and less managed (Howard, Cronon, 1996; Steeles, 2020). The usual streetscape of urban open areas calls to the many human hands that plan, tame, and heavily manage these spaces, whereas the more wild and untamed aesthetic is at times claimed to obscure the human influence on these spaces (Angelo, 2021). This is a funny twist, as every square inch of soil was considered in the Port Lands and the new space itself will be entirely made possible by the toil of the human mind and body. Over layers of soil, engineered membranes are placed to contain the brownfield toxins of the past, and the remediated, recycled soils will create a landscape that holds this work almost as a secret, where, if all goes to plan, it is easy to forget all the hours of human work that made this space a place.

This paper is not so much about the nature of wilderness nor the nature of parks, instead my interests lay in the urban embodiments of nature and what-if any- influences climate change has or has had on the dynamics of nature and society (Cronon, 1996; Angelo,

2021). Urbanization as a process of land use changes and intensified development and population density, is, in this context, transforming lands that were thought of as “underused”, and creating new residential and employment communities. The processes of urbanization and climate change are ongoing, not being synonymous with each other but informing each other’s impacts on the world. Lands are cleared of vegetation and leveled (or in this case filled and lifted) to create developable envelopes and corridors for infrastructure, exacerbating problems of air and water pollution, urban heat island effects, and changing stormwater flows over lands. For the Port Lands the challenge was how to solve the Don problem, and the solution seemed so obvious: make it look like a river again- a healthy river. While the book that came from the citizen group, Friends of the Don, in the 1990’s “Bring Back the Don” (1991) calls to the past a pristine nature to be nostalgic of, the contemporary Port Lands project casts images of a future serene, the benevolence of urban greening, and a community that is resilient and adaptive (Toronto, 2017a). Cronon’s (1996) *The Trouble with Wilderness* outlines the issues with seeing wilderness as pristine. In his work he asserts that the modern understanding of wilderness ignores the realities of the human labour involved in natural places. What we as a society have come to view as nature is not an untouched realm but the results of a deeply involved process between humans and natural systems.



Figure 10. An artist's rendering of the future Canoe Cove, part of the new river system. Image courtesy of Waterfront Toronto.

The transformation of the Don River mouth is not only a physical transformation, but also marks the newest chapter in the narrative of the Port Lands as a place. Its transformation evolving from an important and diverse marsh, to one of industry, disease, and pollution, to then being called the most underused area of the waterfront, and now we are seeing the birth of a new River Mouth, the creation of wetlands and wildlife habitat, and a river regaining its function and health as urban green infrastructure. The Port Lands planning framework establishes the changes to the Don River and the creation of the Don Greenway as having “the broadest possible effect on Toronto’s urban ecology by filling in a critical missing gap in the overall river and marine system” (Toronto, 2017a). Here, Waterfront Toronto, through the Planning Framework, is locating the transformation within the broader regional landscape and urban context. While being located in the regional and urban context is important, so too is it important to remember the grounding factor of the entire Port Lands project, that the “The Port Lands project is all about climate change” (Interview with See-Yin Lim, 2022).

V. Results: Building new communities for the climate change context and the new nature/society relationship

A river as a living landscape cutting through the downtown of a global city, Toronto's Port Lands project has come to represent and embody the forward-looking innovations of resilient and sustainable futurisms. The Port Lands represent on one level a landscape in motion and a medium with a means, while on the other ideologically embodying a future that is almost anti-apocalyptic in its nature. A climate Eden of the twenty first century. The landscape transformation of the Port Lands is an evolving socio-natural assemblage, acting as a link between Toronto as a growing city and the natural process that occur in and throughout the grander landscape. By looking at the language that is prominent throughout the interviews conducted for this study as well as in the Planning Framework and media articles surrounding the Port Lands, I have come to see how nature, water, and the urban landscape intersect to situate us within a type of city-living where natural processes and our relationships to them are at the forefront. The Don Greenway in particular, within the Port Lands, represents a shift in the aesthetic values of certain urban landscapes. The Port Lands as a space for public consumption is designed to provide an encompassing experience where individuals and communities can connect to the larger natural world where we as humans are part of nature, not separate from it. The Port Lands seems to embody what local Plans and Policies call the "culture of conservation" (PPS, 2020).

Though the landscape of the Port Lands is, and will continue to be, heavily engineered, the new river mouth is designed to accommodate the river and its strength instead of the historical processes of domination and frustration (Sandberg et al., 2014; Bonnell, 2014). Accommodating the river and its fluctuations and hydrological processes then 'unlocks' the land for growth, for life, but importantly to those in power, development. The designs and plans for the PL project act as negotiating terms between the natural hydrologic systems of the river and the public realm. Comparing this renaturalizing of the Don with the channelizing and straightening of the past we can see how the new designs are to house and adapt to the river and its waters instead of attempting dominating the waters with straight concrete canals. We as planners and designers are coming to see how the ecological systems of nature will continue to cycle even

through intense impacts of urbanization. It is us as humans who must negotiate for life next to the river, not the other way round. The continued emphasis on the flood protection and unlocking of the land are evidence of this.

Climate change for the Port Lands project is more than sustainable innovation and reducing carbon emissions, it also represents the protection against the threat of harm to communities, damage to properties, and the loss of life. In my interview with Steve Heuchert from the TRCA he asserted firmly that “there’s a need to ensure that nobody is put at risk due to flooding through intensified development” (S. Heuchert, personal communication, April 6, 2022). The TRCA, as the planning body who regulates the river, its floodplain, and valley slopes, mitigates climate change risks through climactic event modelling and regulation flood event projections (S. Heuchert, personal communication, April 6, 2022). Here the TRCA is approaching climate change planning through the projection of the worst-case scenario and protecting beyond. Protecting beyond the worst-case scenario is how we must approach climate change and watershed planning going forward.

Throughout the research I conducted for this paper, all the planning and urban design professionals I interviewed agreed that climate change is becoming a top concern for developing new communities. One participant stating that this has been occurring over the last decade but has, in the last two to three years, become more of a major concern of planning and sustainability. Though approached from different perspectives, the participants in my research all agreed that climate change is driving a new relationship or approach to the city/nature relationship. The inclusion of nature and green spaces in city building is seen as beneficial from several stand points including but not limited to community health, risk mitigation, urban heat island effect reduction, and improved biodiversity and ecological health.

Important to note as well, are how the conversations surrounding the ‘unlocking of the land’ are occurring, the parallel understanding of the increase in value of the lands (through the flood protection and ‘unlocking’), and the expected capital for all interested parties. While climate change and the improvement of the local ecology of the Don River is a major driver for this project it is impossible to ignore the capital involved in such a massive and transformative project. The City of Toronto is the major stakeholder in the Port Lands as the TPLC is the major

landowner. In this case, planners and designers at the City of Toronto, in partnership with agencies like Waterfront Toronto and the TRCA, can frame the desired result of the development and impose higher standards for buildings and carbon lifecycles (interview with Aaron Barter, 2022). Those are at least the plans as set out in the Planning Framework, the development application process for the Port Lands has not yet begun, or at least there have been no development applications submitted as of December 2021 (Comparey and Shenker, 2021).

Much of the narrative and story being told about the Port Lands is on the transformative potential of the landscape, but the underlying understanding by those involved is that of local and global economics and capitalism. Van der Heijden et al., in their work on the role of cities in climate governance remark that “there remains a worrying lack of assessment of whether the current urban elites involved in reshaping (local) climate change governance have a substantive interest in global climate change and transformation since dominant discourses are rather about resource security, green growth, smart cities, and so on” (van der Heijden et al., 2019). This statement is important to remember as the urban elites include those who are politicians or who are on city councils as well those at the top of development companies. It is these people who will decide the configuration of much of the urban form. It is then a question of how will these plans for the city be sold to the public? And what story can be told through the plans to aid in this?

One of the interview participants for my research expressed concern over how urban greening has become a fad, their worries relating to the fickle nature of fads and trends while the need for deep-rooted cultural change is not addressed. For new community building and urbanization projects, policies outlining specific parameters to development, and regulating how developers can transform landscapes are needed. Developers frequently engage in bare minimum tactics when it comes to the natural systems and many times combat even simple requirements surrounding restoration and enhancement plans (personal experience). Developers must be held to a higher standard for protecting and enhancing natural heritage systems and one of the tools to do this is policy (Sandberg et al., 2013).

Toronto's OP specifically, does not offer many requirements nor specifics when it relates to natural heritage planning. Many of the policies are loose and while this is useful for context and site-specific parameters, it is essential that the City of Toronto capture opportunities to study and protect the City's urban natures. As climate change will affect quite literally how the landscape will look and operate as systems - policies can be put in place to protect transitioning landscapes. Landscapes in transition will become more and more commonplace as climate change impacts on hydrological systems occur and lands are not able to support the same systems as they previously could. Shorelines of oceans, lakes and rivers will see huge changes under climate change, and the material and social implications of this will be widely and unevenly felt across social and economic lines.

VI. Discussion and Conclusions

Reconfiguring and rebuilding the Don River call us to a historical landscape, acted upon by natural processes (geologic and hydrologic) and manipulated by human hands. The flood protection being offered for such a large area and the ‘unlocking’ of the landscape call out ideologies of nature and culture in both past and future, where in the past the emphasis of the Don River projects were about change and domination, the current designs rely heavily on projected utopian futures where climate change strategies are envisioned as sustainability and resilience objectives.

For the Port Lands plans, sustainability, and resilience -- represented as efforts and objectives in planning documents and social media -- necessarily represent climate change strategies (A. Barter, personal communication, April 12, 2022, S.Y. Lim, personal communication, May 5, 2022). The frequent use of sustainability and resilience language within the Planning framework reflects the Provincial and Municipal involvement with the project. The language of the framework closely mirrors the language and objectives of the relevant policy documents. The Port Lands project is in a unique situation as having local government in the position as major stakeholder allows for an attempt at an ideal model of future urban communities. The above-standard aspects of the Port Lands designs and objectives are a product of governmental involvement. Developers do not have the same pressures and objectives of public input and satisfaction as municipal and provincial projects do. The role of the state as a stakeholder *and* regulator, in the renaturalization of the Don River mouth and consequential development, allows the enhancement of public-to-nature connection points as state funded natural spaces are typically understood as part of the commons, accessible to all (Sandberg et al., 2013 p. 237).

The focus of the project is the land and water, while the day-to-day realities of the expected communities are projected within the planning and policy documents. The public perception of the Port Lands project is vital to its success. The City of Toronto, as the major stakeholder and landowner in the project, must sell the idea of the Port Lands project to the public and perhaps most importantly, developers. A major aspect of the selling point of the Port

Lands is the utopian vision of a community resistant, adapted, and resilient to climate change impacts. While the planning documents and media releases focus on both adaptation and mitigation, adaptation strategies are where the City can exercise the most control. Mitigation efforts in the context of the Port Lands, are represented through envisioned complete communities, and expected major transit, neither of which they can guarantee. Much of the major transportation infrastructure will not be completed for many years, as well, the active transport and pedestrian bridges have not yet been funded (Comparey and Shenker, 2021). Much of the climate change literature and policy directives for the Province and Toronto promote alternative transport yet we are not seeing it for new communities. Leading with landscape only does so much when people need to travel for work and life. Remaining to be seen in the Port Lands is how the climate positivity for the project measures up to the expectations of the project plans and media releases.

The Port Lands Planning Framework frames the future of the area based on utopian visions of what a green and benevolent landscape looks like in the context of climate change. Envisioning the future through an ideology of nature mixes the more recent visions of urban natures as leisure and recreations spaces with the future-looking objectives of climate change adaptation and mitigation. The transformation of the Don River mouth, from its historical past as a silty marsh to the straightened canals of industry, to the new vision of a renaturalized river mouth represent two distinct movements in the ideologies of nature and culture in Toronto. The past Don River projects attempting to lock the river in while the current vision unlocks the lands by accommodating and giving space to the river through the additional outlets and raising of the lands. In the past the Don River was a resource of industry, while now the Don is a multidimensional resource of the public realm. The new imagined mouth of the Don (visions of the complete project) encompasses inherent values in the more than human systems with which we live. What complicates the visions of living in a balance with nature in the Port Lands is the underlying capitalist nature of the project. While the renaturalization of the river and the associated flood protection have been financed by the three levels of government in Toronto, the rest of the development, the human communities, have yet to be funded (Comparey and Shenker, 2021). For this to happen, the vision for the Port Lands, and the visions for a green

future they present, must be 'sold' as capitalist ventures. Climate change mitigation strategies are also risk and liability protection assurances, which are attractive for developers and investors. The capitalist nature of this side of the project lends itself to suspicions of bottom-dollar intents and questions of long-term outcomes. The future of the Port Lands depends on the continued involvement and maintenance by the state and conservation authorities which regulate the Don River and its floodplain.

Climate change is catalyzing a transformation in the modern western ideology of nature and culture through the perceived threats and hazard potentials of natural systems and processes. Water systems being particularly highlighted in this through stormwater management, wetland filtration, and habitat creation and enhancement. Planning in urban areas is seeing a shift in the emphasis to climate change as one of the top concerns in new development communities (A. Barter, personal communication, April 12, 2022; S. Heuchert, personal communication, April 6, 2022). Within the strategies to combat climate change is emerging an increased focus on the green infrastructure of natural heritage systems to aid in the continued existence and maintained quality of life of humans. Sustainable futurisms depend on the relational potential of the built form in forging connections between human and more than human communities and natural(ized) landscapes. Through lessons of relational belonging within the bio-regional context, we as a society have an opportunity to protect, enhance, and renaturalize environments that were previously contaminated from the industrial and post-industrial historical processes.

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