WATERFRONT SUSTAINABILITY PLANNING IN ONTARIO: A REVIEW OF TORONTO, KINGSTON, AND BARRIE

REBECCA CLARK
STUDENT NUMBER: 20001993

A thesis submitted to the Department of Environmental Science in partial fulfillment of the requirements for the degree of Bachelor of Science (Honours)

Queen's University

Kingston, Ontario, Canada

April 2020

ABSTRACT

With increasingly large populations living in cities, it has become important for sustainable urban planning practices to optimize urban locations. As cities are commonly located on waterbodies, waterfronts have become a spotlight of urban sustainability planning. Waterfront regeneration therefore aims to revitalize waterfronts that have been left as vast areas of polluted, underutilized terrain. This concept has been made popular specifically within the *Royal Commission on the Future of the Toronto Waterfront* by David Crombie, who made recommendations on waterfront sustainability. My research utilizes various literature available on waterfront planning to design a Waterfront Sustainability Evaluation Framework, based predominantly on sustainability themes developed by Gibson (2006) within *Sustainability Assessment: Basic Components of Practical Approach.* The framework is applied to three urban waterfront case studies based on population comparisons; Toronto, Kingston, and Barrie. Document analysis, specifically conducted on NVIVO 12, was utilized to code specific aspects of the framework to references within the chosen city planning documents. The document analysis determined that Kingston most successfully met the Waterfront Sustainability

Evaluation Framework. It can be predicted that this is because Waterfront Kingston has been developed in conjunction with Sustainable Kingston, using valuable expertise from Waterfront Toronto. Therefore, the framework focuses on many of the main Waterfront Sustainability Evaluation Framework themes. Closer analysis of the data also displayed successes per attribute for Toronto and Barrie. Examining each municipality identified common trends of where each city is lacking and where best management practices in support of sustainability are more commonly adapted. Data analysis between all three case studies also displayed less important aspects which were included in the Waterfront Sustainability Evaluation Framework and could be omitted. Additionally, safety, economic development, innovation and aesthetics, connectivity, and transparency were determined to be topics for future research applications. Overall, the research suggests that the framework developed was successful in helping understand the importance of specific themes within waterfront sustainability planning, and the literature review strongly reflected the themes which were displayed in the chosen case study city planning documents.

Through the research conducted, it is distinctly recognizable that waterfronts within cities are continuing to evolve to apply to the larger concept of urban planning. Sustainable waterfront planning has the capability of sparking improvements and progress within waterfront areas, as well as the entirety of a city, to promote positive sustainable change.

TABLE OF CONTENTS

1.0 INTRODUCTION

Over 68% of the world population is projected to live in urban areas by 2050, according to the United Nations (United Nations Department of Economic and Social Affairs , 2018). Throughout history, many cities and surrounding urban areas have been located on the coast or waterbodies, primarily due to the forms of trade, investment, and innovation which ports and harbours have facilitated (Ravetz, 2013). However, in the past several decades, many waterfront areas have gone through a phase of decline as their infrastructure aged or was replaced by modern facilities. This has resulted in many waterfront areas becoming underutilized, with contaminated sites and clear signs of environmental decay and poverty (Girard, Kourtit, & Nijkamp, 2014).

Historically, many waterfront areas have been left as vast areas of underutilized obsolescent lands referred to as "terrain of availability" (Laidley, 2007, p. 261). A legacy of these areas includes soil and groundwater contamination (Laidley, 2007, p. 261). Within these areas, water contamination is caused by a variety of sources including agricultural and industrial chemicals, leachate from landfills, road salt, and inadequate septic systems (Crombie, 1992). Additionally, in many of these waterfront areas, soils are contaminated with heavy metals and organic chemicals, often from the legacy of industry, refinery sites, and poor handling of hazardous materials (Crombie, 1992). This contamination of waterfront areas limits and constrains public accessibility, impacting activities such as fishing and swimming, impairing the "clean", "green" and "accessible" approach to waterfronts recommended by David Crombie (Crombie, 1992).

David Crombie was Toronto's former mayor who is well known for his involvement with the *Royal Commission on the Future of the Toronto Waterfront* to provide suggestions on urban waterfront sustainability. He is known for his progressive views on land use planning, which was why he was appointed by the provincial government of the day as head of the agency to

implement the 83 recommendations made in his final report, *Regeneration* (Lehrer & Laidley, 2008). These recommendations addressed the significant issues with waterfront areas by integrating them into an 'ecosystem approach' and an environmentally focused mode of development. The ecosystem approach concept holds that "economy, social issues, and environment are interrelated – decisions made in one area all affect all the others" (Crombie, 1992, pg. 11). In 1999, Crombie founded the Waterfront Regeneration Trust to continue the work of the provincial agency, and served on the Board (Lehrer & Laidley, 2008). His recommendations and nine guiding principles have been widely used for waterfront planning across Canada.

Closer to the end of the 20th century, the public became more concerned about environmental-city health, the misuse of natural resources, and the aesthetic scenery of the waterfront (Timur, 2013). Regeneration of waterfront areas advocates that there be adequate access for the public, and as a result, requires the development of plans to create new social facilities, expand employment, and reduce health concerns associated with environmental decay (Jones, 1998). Additionally, the public should be able to enjoy waterfront areas with easy accessibility to all sectors of society, including vulnerable populations (Crombie, 1992). The period of industrial revolution (in particular post-World War II) encouraged a notion that good quality of life was tied to unlimited economic development, thus disregarding deteriorating environmental conditions (Laidley, 2007). Regeneration of waterfront areas requires a sustainability understanding that waterfronts are long-term projects which require attention by all political levels to ensure that progressive objectives such as those developed by Crombie are realized independently of economic cycles or short-term interests (Timur, 2013). Although the process is a significant ongoing investment for municipalities, the benefits of regeneration have the

potential opportunity for cities to attract new investment, act as hubs of tourism, aesthetic attraction, and encourage cities to learn from other cities engaged in the process (Timur, 2013; Kostopoulou, 2013).

Waterfront decline has led to serious environmental and social issues which complicate the process of remediation, as well as design, access, and other aspects of redevelopment (Hersh, 2012). Many environmentalists continue to see cities as unnatural, when the reality is rooted in the fact that cities should be designed and integrated with environmental principles. Sustainability will not be possible in the long-term unless we can find ways to regenerate urban ecosystems, keep them in good health, and transform urban lifestyles (Crombie, 1992). While many waterfronts continue to be a hotspot of decline, they have also proven to offer opportunities as places for sustainable innovation, based on the creative contexts of physical, social, and economic resources (Ravetz, 2013). Waterfront areas can constitute the entry point and core place for sustainable development in the entire urban system, and thus may be a land-entry point for people and goods, but also act as core entry places for sustainable development for an integrated urban system (Girard, Kourtit, & Nijkamp, 2014, p. 4581).

Waterfront regeneration is occurring in big, medium, and small-scale cities, in some cases acting as a starting point for the regeneration of the city itself, and has contributed to the spread of the integrated ecosystem approach (Jelovac, 2013). Regeneration, as applied by Crombie, has redefined how the modern city is constantly transformed through various processes of reconstruction where urban waterfront regeneration receives full attention, with the intention of becoming a space for interaction between the multiple systems; land and water, urban and environment, transition and dynamic change (Jelovac, 2013).

This topic is personally interesting to me due to the continual growth of cities, potential re-development of waterfront areas that have declined, and endless possibilities that urban sustainable planning has for these areas. Having lived and travelled to many different cities throughout my childhood, I am intrigued by the potential planning has to integrate sustainability into the future of cities, as well as waterfront areas, to improve the overall environmental condition. Instead of viewing the city as a negative environmental space, it can be viewed as a catalyst for positive and sustainable change (Walker, 2013, p. 87).

1.1 Thesis Goals and Objectives

My research objective is to evaluate waterfront planning in Ontario to determine contributions to sustainability. This will be achieved through the following steps;

1. Carry out a literature review of waterfront planning literature;
2. Design a waterfront sustainability evaluation framework based on the literature review;
3. Evaluate waterfront re-development case studies within Ontario (Toronto, Kingston, and Barrie) based on the waterfront evaluation framework developed in objective 2 ;
4. Based on the case study analysis, discuss the effectiveness of the framework, and develop recommendations for future sustainable waterfront re-development approaches

Table 1.0 identifies the studies assessed to determine waterfront planning sustainability and identify recommendations;

TABLE 1.0: *Case study cities chosen for review (Large: Toronto, Medium: Kingston and Barrie) with associated population sizes.*

Large City	**Population**
Toronto	2,800,000
Medium City	**Population**
Kingston	114, 195
Barrie	182, 041

(World Population Review, 2020)

These cities were chosen based on their size and population. Kingston and Barrie are considered mid-sized cities and Toronto is considered a large city. Please note that while originally it was intended for more cities to be evaluated, the time and effort that was needed reduced the number of cases analyzed.

1.2 Outcomes

The research resulted in a waterfront sustainability evaluation framework (Chapter 3.4, page 20) capable of evaluating the condition and state of waterfront sustainability contributions within mid and large cities in Ontario. The research also resulted in information on sustainability and waterfront planning that led to suggestions for improved sustainable waterfront planning. Soft and hard infrastructure are discussed. Soft infrastructure refers to a system of associative structures and social networks, connections, and human interactions that encourage the flow of ideas between individuals and institutions. Hard infrastructure includes buildings and institutions such as educational and research institutions, cultural facilities, and social meeting places, as well as support services such as public transport, health, and amenities (Landry, 2008, p. 133).

2.0 LITERATURE REVIEW

2.1 Historical Waterfront Development

Tracing the historical role of urban waterfronts in the development of cities, it is apparent that waterfronts change in response to demand for new uses (Wrenn, 1984). Waterfronts are being rediscovered as potential opportunities for economic development and public enjoyment. Waterfronts are historically known as spaces at the water's edge that were once home to manufacturing plants, cargo handling facilities, passenger ship terminals, sailor towns, and warehouses (Desfor, Laidley, Stevens, & Schubert, 2011). The idea of a solely maritime waterfront mostly came to a close with the end of the period of industrial growth in the early 20th

century, and since then, there has been an intense effort to redesign abandoned waterfronts (Kostopoulou, 2013). Port areas are still recognizable because they have not shifted from their original positions and have maintained the profile and shape of places that are easily identified. However, waterfronts are now shifting away from predominantly maritime use and are being re-imagined through urban planning and renewal processes (Bruttomesso, 2004; Hoyle, 2000). The end of the industrial revolution brought forward land use planning that includes recovering heritage and increasing its importance in urban development policies as a resource that can improve and upgrade cities (Bruttomesso, 2004). Thus, historically, the incentive for developing waterfronts is related to the waterfront conditions. Two significant factors in stimulating development were: a shift in functional role of waterfronts from exclusively commercial activities to public use, and the movement towards dramatic improvement in environmental quality (Wrenn, 1984). Thus, the waterfront was no longer viewed as solely functional or industrial, and represented the potentiality of attractiveness and improvement of derelict and mostly abandoned waterfront sites within port cities and rural waterfront locations (Hoyle, 2000). Yet, reinventing port cities from the water's edge is not new. Waterfronts have been centers of urban transformation for centuries, and will, no doubt, continue to be so whether the port or the city is the main influence on waterfront activities (Desfor, Laidley, Stevens, & Schubert, 2011).

Specifically, it is important to note that while historically in Europe the redevelopment of the waterfront is essentially maritime in character, North Americans are inclined to see the redevelopment of the urban waterfront as part of the process of urban renewal (Hoyle, 2000). This is mainly due to the post-industrial economy in North America which considers both the historical, social, and environmental importance of urban areas and cities surrounding water bodies. Due to this, many cities have sought to revitalize and bring urban areas, cores, and

waterfronts into the 21st century (Thai, Rahm, & Coggburn, 2007). The general renewed interest in the inner city is stimulating development, and waterfront locations are prime attractions for new or converted residences, offices, or shops near city or neighbourhood centers while also providing the opportunity for cities to reuse older structures (Wrenn, 1984).

My research focuses mainly on North America as it has been influenced by port activities in the past and present, and is therefore in many ways relevant to contemporary waterfront revitalization (Thai, Rahm, & Coggburn, 2007). In addition to cities attempting to revitalize water areas, increased citizen activism seeking public spaces such as parks and boardwalks has increased the competition for land and sustainable design. With a movement towards sustainable development, many city governments have recognized the need for plans to guide the transformation of the urban waterfront and lead the city into greater urban sustainability (Thai, Rahm, & Coggburn, 2007).

2.2 Urban Land Use and Regeneration

In 10 years, more than half of the worlds population will be living in cities, and as so, urban planning and urban sustainability has been on the rise (Basiago, 1999). Most cities and towns gradually evolve through a continuous process of change and development, sometimes led by a community that shapes its character, as well as corresponding human life and health (Levy, 2017). The concept of urban planning is best defined as a form of state intervention that aims to influence through three main instruments; plans, control, and promotion (Adams, 1994). Today, cities face change brought by a series of structural forces, including globalisation, economic restructuring, increasing competition from other cities, and restructuring of the welfare state (Colantionio & Dixon, 2011). As cities are constantly changing dynamically, the complexity of understanding and preparing for positive development of the city justified urban planning as a

separate profession and activity of government which requires significant attention (Levy, 2017). Specifically, in the past couple of decades, planning efforts have also shifted to focus on environmental issues and the concept of sustainable urban design. This has led to the development of urban regeneration to act as a catalyst for sustainable change within cities.

Urban regeneration involves the public, private, community and voluntary sectors working together towards a clear and single aim to improve quality of life for all (Roberts & Sykes, 2008, p. xiv). As urban regeneration is an expansive topic, and a dynamic phenomenon, it is almost impossible to articulate the features of its definition. Urban regeneration moves beyond the aims, aspirations, and achievements of urban renewal (Roberts & Sykes, 2008). It implies that any approach to tackling problems in cities and towns should be constructed with a longer-term, more strategic purpose in mind. Thus, urban regeneration is defined as "a comprehensive and integrated vision and action which leads to the resolution of urban problems and which seeks to bring about a lasting change in the economic, physical, social, and environmental condition of an area that has been subject to change" (Roberts & Sykes, 2008, p. 296). It is important to note that one of the most important aspects of regeneration is heritage of the area which is being regenerated. Throughout the process of regeneration, the goal is to integrate the cities heritage into a better, more sustainable solution instead of entirely redesigning urban landscapes (Dreyfuss, Mifsud, & Malderen, 2013). Thus, there is an increasing recognition that if regeneration is to be sustainable, it must adopt a long-term multi-faceted approach. This can be met by addressing unemployment, enhancing educational attainment, and reducing crime, as well as transforming the urban fabric through infrastructure provision, improved housing, and the redevelopment of derelict land and buildings (Colantionio & Dixon, 2011). These concepts are important to consider when addressing urban waterfront design, specifically waterfront

regeneration; which has been built upon the pillars of sustainability and the improvement of environment and quality of life within urban areas.

2.3 Waterfront Regeneration

Waterfront regeneration refers to efforts since the 1970s to transform numerous waterfronts from 'brownfields' or 'greenbelts' to commercial, residential, and recreational areas. As discussed in Chapter 2.1, waterfront regeneration as part of rebuilding of cities is a timeless activity. The Greeks, Romans, and Byzantines all engaged in harbor-building and waterfront renewal in response to changing political, economic, and geological circumstances (Smith & Ferrari, 2012). Five different periods in the evolution of urban regeneration have been distinguished by Roberts (2000): a) reconstruction (1950s), b) revitalization (1960s), c) renewal (1970s), d) redevelopment (1980s), e) regeneration (1990s). Overall, the ideas of regeneration have meant an introduction of broader ideas of environmental sustainability containing social dimensions and community targets (Sairinen & Kumpulainen, 2006). Regeneration is central to waterfront work, as it entails re-examining and revitalizing urban zones that are of considerable size and often located a short distance from the city center. The outcome is reintroducing waterfront areas into modern design, with an increase in value, thus redefining the role and image of the entire city (Bruttomesso, 2004). Today, the exemplary waterfront regeneration projects are large-scale, prestige projects that have been the feature of urban regeneration in North American and European cities over the last decade (Bassett, Griffths, & Smith, 2002). It can be argued that contemporary urban waterfront redevelopment and regeneration projects represent an international undertaking in urban planning and politics (Sairinen & Kumpulainen, 2006).

Particularly, considering advances in waterfront regeneration in North America, David Crombie's *Royal Commission on the Future of the Toronto Waterfront* (1992) is a pivotal piece

of literature regarding waterfront regeneration in Toronto. In 1989, the federal government appointed a Royal Commission, led by former Toronto Mayor David Crombie, to provide suggestions on the Future of the Toronto Waterfront and how problems could be rectified (Lehrer & Laidley, 2008). Crombie suggested 83 recommendations, guided by an "ecosystem approach to the regeneration of cities", where a city should be regarded as a natural ecosystem, requiring an integrated approach for addressing its problems (Crombie, 1992, p. 19). The work was guided by the ecosystem approach, as well as nine principles that can be applied to make the greater Toronto Waterfront Area healthier and more sustainable; clean, green, connected, open, accessible, useable, diverse, affordable, and attractive (Crombie, 1992, p. 12). Since the 1990's, redevelopment of the waterfront had become a primary goal within the City of Toronto and has gained global interest in the process. This piece of literature has become a pivotal aspect of the ecosystem approach, quickly gaining currency with both the public and governments, and being incorporated into many institutional planning processes within North America (Lehrer & Laidley, 2008).

2.4 Sustainability and Sustainability Assessment

The definition for sustainability put forth in the 1983 World Commission on Environment and Development, also known as the Brundtland Commission, is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Rosen, 2009; United Nations, 1987, p. 15). The breadth of the term sustainable development covers environmental, economic, social, and cultural dimensions and the manner in which it is applied often varies by field (Rosen, 2009). Sustainable cities, for example, are viewed as those that meet our human need for healthy and diverse habitats while preserving non-renewable resources for future generations and staying within the limits of local, regional, and global ecosystems (Tomalty, 2013). To measure sustainability within the environment and cities,

sustainability assessment has become a vital aspect of developing, monitoring, and encouraging progress.

Sustainability assessment initiatives in various forms and under various titles have been spreading globally. In a world of rapid change, specialized expertise, narrow mandates, and immediate pressures, attention to interconnections and future generations is complicated (Gibson, 2006). Particularly, the issue of planning for sustainability is becoming more established within North America. As municipalities align planning policies to reflect sustainability, there is higher interest with how sustainability is being operationalised within municipal documents (Stuart, Collins, Alger, & Whitelaw, 2016). Considering waterfront planning, current policy-based approaches to sustainability are addressing socially oriented strategies which are focused on community involvement, inclusive decision making, equity, socio-ecological civility, long-term integrative planning, and responsibility through stewardship (Stuart, Collins, Alger, & Whitelaw, 2016). It is important to consider, however, that there is no formally mandated procedure for how sustainability frameworks are developed or implemented, giving municipalities ultimate autonomy over the sustainability vision and implementation strategy.

Robert Gibson has put forward a broad integrative approach to sustainability assessment, which has become an integral aspect of my thesis. Gibson suggests that with the depth of complexity to sustainability, it is integral to prepare for a comprehensive adoption and more consistent application of the requirements and processes of sustainability. As a result, Gibson translated the sustainability concept through core generic criteria for sustainability that can be used for assessment purposes and argues that sustainability assessment must account for; sustainability requirement, interdependencies, sustainability decision criteria influenced by stakeholders,

assessment, and monitoring (Gibson, 2006). These core generic criteria were utilized within the methodology stage of this thesis to design an evaluative framework for sustainable urban waterfront planning. The specific aspects of this are elaborated in detail in the methodology section.

3.0 METHODS

3.1 Qualitative Research

Qualitative research was utilized to evaluate waterfront sustainability documents and literature specific to the case studies. Qualitative research enables the researcher to conduct in-depth studies about a broad array of topics as well as offers a greater latitude in selecting topics of interest due to reduced constraints that are experienced by other research methods. This method is commonly defined by five main features, all of which will be utilized within the research process.

1. Studying the meaning of people's lives in real world conditions.
2. Representing the views and perspectives of people in a study.
3. Covering the contextual conditions within which people live.
4. Contributing insights into existing or emerging concepts that may help to explain human social behaviour.
5. Striving to use multiple sources of evidence rather than relying on a single source alone. (Yin, 2011, pp. 7,8)

Qualitative research was utilized to inform information gathering for the waterfront sustainability framework and to add credibility and insight to the final discussion. By using qualitative research, the information presented should be transparent, follow a set method, and be based on an explicit set of evidence (Yin, 2011).

3.2 Thematic Document Analysis

Thematic analysis described by the Psychology Department, Auckland University was utilized as a method to determine key sustainability themes within waterfront planning documents (The University of Auckland, 2019). This was a reflexive method which focused on identifying patterned meaning across a data set. Patterns were identified through a rigorous process of data familiarisation, data coding, theme development, and revision. The specific analysis required both inductive and deductive analysis which:

- Inductive - Theme developments are directed by the content of the data.
- Deductive - Theme developments are directed by existing concepts or ideas.

The six-step approach was utilized to complete the analysis:

1. Familiarisation with the data - reading and understanding the literature.
2. Coding - Identifying labels for features of the data that may be relevant to the research question.
3. Generating initial themes - Examining the collected data to identify significant broader patterns of meaning (potential themes).
4. Reviewing themes - Verifying that the proposed themes answer the research question or provide relevant information to the topic.
5. Defining and naming themes - Providing a detailed analysis of each theme, determining the scope and focus of each theme.
6. Write-up - Combining the analytic narrative and data extracts and contextualizing the analysis in relation to existing literature.

(The University of Auckland, 2019)

This required the collected case study literature to be examined and interpreted to gain elicit meaning, understanding, and develop empirical knowledge (Bowen, 2009). The resulting evidence was evaluated to determine the meaning of each document and its contribution to the issue, as well as the authenticity, credibility, accuracy, and representativeness of the selected documents (Berg, 2001; Queiros, Faria, & Almeida, 2017).

It is important to note, that when performing the case study research, various limitations included low retrievability, insufficient detail, and biased selectivity (Queiros, Faria, & Almeida, 2017). Low retrievability refers to documentation or research which is not retrievable, is difficult, or requires a higher position of authority to access. Yin (2012) also notes that access to some documents may be deliberately blocked depending on the literature. Insufficient detail is also a limitation that can arise when documents are produced for some purpose other than research or they are not applicable to the level of research that is required. Finally, biased selectivity refers to an incomplete collection of documents, or a selected group of documents that may suggest support in favour of the research hypothesis without considering multiple perspectives (Queiros, Faria, & Almeida, 2017). Knowledge of these limitations throughout the research process helped to mitigate errors as well as inaccurate interpretation associated with the collected data.

3.3 NVIVO 12 Document Analysis Software

To facilitate document analysis, NVIVO 12 was used to gain richer insights from qualitative and mixed methods data. Waterfront planning documents, as well as official city planning documents were uploaded to NVIVO 12. Documents were analyzed on NVIVO 12 by coding ‘nodes’. Each of these nodes were correlated to the major themes identified in the Waterfront Sustainability Evaluation Framework and ‘sub nodes’ based on the attributes identified in the framework (discussed in Chapter 3.4). While conducting document analysis, any theme or concept which was identified to correlate to an attribute or node was coded to the theme. The result is a

condensed set of recordings based on each file that is linked to the associated node. NVIVO records both percentage of a file that is coded to a node, as well as the number of node references. For purposes of maintaining transferability and comparability between waterfront files, number of node references were focused upon over percentage of text within a file.

TABLE 2.0 : *A list of official documents used for document analysis labelled by document title for Toronto, Kingston and Barrie ordered by date published.*

Toronto	
Official Plan Our Toronto Waterfront! Wave of the Future	1999
Making Waves – Central Waterfront Plan Part II (City Council Adopted 2013)	2001
Waterfront Strategic Review	2015
Waterfront Toronto Rolling Five Year Strategic Plan	2018
Toronto Official Plan	2019
Kingston	
Kingston Downtown Action Plan: Waterfront Esplanade Recommendations	2001
Sustainable Kingston Plan ICSP	2010
Waterfront Master Plan	2016
City of Kingston Official Plan	2019
Barrie	
Technical Memorandum	2012
Waterfront and Marina Strategic Plan	2013
Official Plan	2014

3.4 Waterfront Sustainability Evaluation Framework

To design an evaluative framework, the broad themes were selected as developed by Gibson (2006) within *Sustainability Assessment: Basic Components of Practical Approach*.

- Equity (Inter and Intra).
- Immediate and Long-Term Integration.
- Livelihood Sufficiency and Opportunity.
- Precaution and Adaption.
- Resource Maintenance and Efficiency.
- Socio-Ecological Civility.
- Socio-ecological System Integrity.

(Gibson, 2006, p. 174)

Additionally, specific attributes were identified for each theme (Table 3.0). The table sets out the themes and attributes explored in each document reviewed. This was the deductive aspect of the research. Each document was also evaluated for themes and attributes that were not previously identified in the literature, the indictive part of the research.

TABLE 3.0: *An evaluative framework of sustainable waterfront design based on concepts from Gibson (2006), Stuart, Collins, Alger & Whitelaw (2016), as well as several academic articles cited in the discussion following this table. The broad concepts are listed as "Themes" on the left-hand side of the table. More specific concepts are listed on the right-hand side of the table as "Attributes".*

Theme	**Attributes**
Equity	Sustainability
	Population Dynamics
	Equal Access

Theme	**Attributes**
Equity	Waterfront Regulation/ Committee
	Mediation
Immediate and Long-Term Integration	Collaboration
	Triple Bottom Line
	Policy Alignment
	Horizontal/ Vertical Integration
	Integrated Community Sustainability Planning (ICSP)
Livelihood Sufficiency and Opportunity	Culture
	Transportation
	Multiple Usage
	Vulnerable Populations
Precaution and Adaptation	Land Use/ Spatial Planning
	Monitoring
	Waste and Pollution Monitoring/ Baseline
	Provincial Water Quality Standards
	Precautionary Principle
	Reversibility
	Resilience
	Zoning
Resource Maintenance and Efficiency	Optimization
	Conservation

Theme	Attributes
Resource Maintenance and Efficiency	Minimal Environmental Effect
	Proactivity
Socio-Ecological Civility	Advisory Committee
	Stakeholders
	Community Participation
	Public Consultation
Socio-Ecological System Integrity	Heritage Conservation
	Ecosystem Approach
	Environmental Sensitive Areas
	Strategic Environmental Assessment; SEA

3.4.1 Equity

According to Gibson (2006), equity is based on both intra-generational and inter-generational factors. Sustainable waterfront planning should take equity into consideration. Intra-generational equity refers to global justice between people and the present generation. Inter-generational equity is justice between people of different generations. Equity relies on the regulation of ecosystem services such as soil formation, cycling of nutrients and water, primary production and production of atmospheric oxygen, and cultural services such as recreation and aesthetic experiences (Glotzbatch & Baumgartner, 2012). Of importance regarding this theme is the development of a waterfront planning process that works to achieve equity.

The following visual (Figure 1.0) by Glotzbatch and Baumgartner (2012), displays how a specific waterfront case study can be applied to inter or intra generational equity (or justice).

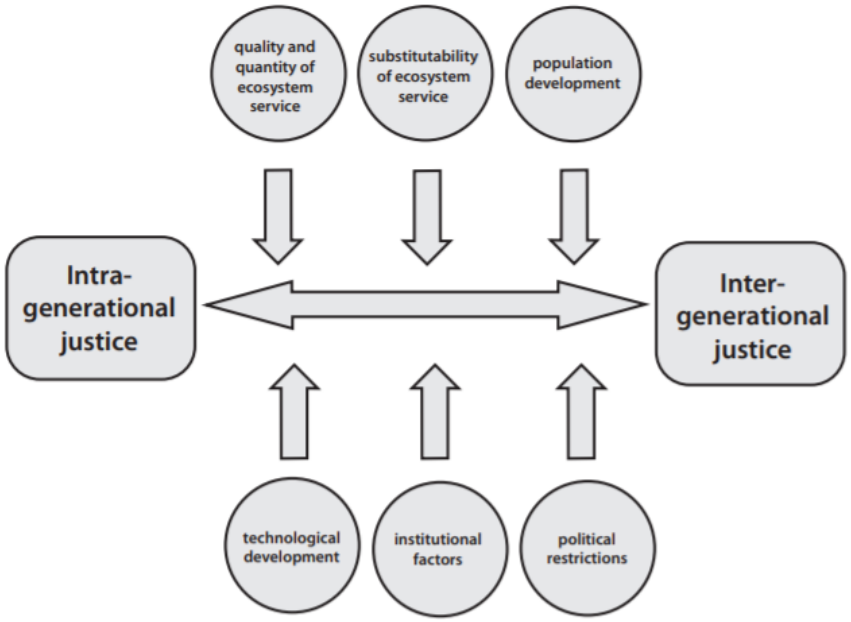

***Figure 1.0*:** A visual designed by Glotzbatch and Baumgartner (2012) which displays how a specific waterfront case study can be applied to inter or intra generational equity (or justice). The visual is designed to function similarly to a spectrum, in which the far left supports intra generational justice while the far right supports inter generational justice. Several factors (shown in the circles) represent examples of how to achieve each and display that supporting both intra and inter generational equity can be challenging.

Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: sustainability, population dynamics, equal access, waterfront regulation or committee, and mediation. Each of these are briefly discussed in the context of the sustainability theme.

As sustainability is understood as a broad concept within sustainable waterfront planning, the definition is referred to in Chapter 2.4 of the literature review and is fundamental to equity. To enable equitable management of spatial development of waterfronts, it is essential to understand

the use of the urban area (reflected in urban population densities). Thus, population dynamics of cities assist in determining needs and representations of involved stakeholders and vulnerable populations (Krunic, Maksin, Milijic, & Durdevic, 2014, p. 1). Understanding the population dynamics also contributes to ensuring equal access to the waterfront area. This is possible through continued considerations of equity throughout the planning process, as well as transportation, multiple usage, and vulnerable population discussed in Chapter 3.4.3. To maintain accountability for equitable actions, a waterfront regulation committee is often implemented. For example, Waterfront Toronto was established in 2001 by the Government of Canada, Province of Ontario, and the City of Toronto to oversee and deliver the revitalization of Toronto's waterfront (Waterfront Toronto, 2001). One role of waterfront regulation committee is to implement mediation for the settlement of planning techniques where disputes concern specific proposals for the development of land, between local planning authorities, private developers, and community groups (Pearce & Stubbs, 2000, p. 1336).

3.4.2 Immediate and Long-Term Integration

Gibson (2006) describes immediate and long-term integration as an aspect of planning which applies all sustainability principles at once, seeking mutually supportive benefits and gains (Gibson, 2006, p. 174). This is determined to result in positive progression in all areas of plans, at least in general and the long-term (Gibson, 2006, p. 174). Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: collaboration, triple bottom line, policy alignment, horizontal/vertical integration, and integrated community sustainability planning (ICSP). Each of these are briefly discussed in the context of the sustainability theme.

Collaboration refers to maintaining and facilitating relationships during the planning process with participating stakeholders, local neighbourhoods, the private sector and any other contributing body to combine expertise on the process (Galland, 2012). This is relevant to the triple bottom line; a viewpoint which addresses impacts beyond profits margins, finances, and economic issues, to outline social impacts, benefits and burdens, and concerns of tourism and hospitality in urban communities and environments (Wise, 2016, p. 31). Thus, collaboration is necessary to be able to meet the needs of the triple bottom approach within the planning process. This also requires a greater concern to integrate public policies and make them more citizen oriented. Policy alignment and integration is determined to have four overlapping dimensions: the (co)aligning of strategies and policy, policy reframing, connecting policy and action, and co-operation among actors (Vigar, 2009, p. 1572). Thus, policy alignment is a coordinating strategy to generate win-win situations or broaden a policy frame to encompass a new issue (Vigar, 2009, p. 1572). To effectively participate in policy alignment, as well as the triple bottom line approach, horizontal and vertical integration is often utilized. Horizontal integration (in terms of policy management) refers to integration between policy areas, coordinating the policy fields. Vertical integration (in terms of government) refers to coordination between different levels of government, allowing for multi-level governance (European Commission, 2015, p. 9). Lastly, as sustainable waterfront planning is intended to contribute to the goal of positive influence beyond the waterfront area, ICSP is determined to be important aspect of the planning process. The concept requires commitments prior to cooperation among government agencies, integrated policy approaches, and the alignment of economic and other incentives (Ling, Hanna, & Dale, 2009, p. 242). Overall, the plan is developed in consultation with community members, to help the community realize sustainability objectives within the environmental, cultural, social, and

economic dimensions of identity. This is an ongoing process of engaging stakeholders in the community in co-creating a vision of a sustainable future and linking that to realistic planning and collaborative action. The four common challenges to achieving ICSP are; integration, scale, governance, and inclusion (Ling, Hanna, & Dale, 2009, p. 230).

3.4.3 Livelihood Sufficiency and Opportunity Planning

Gibson describes this theme as ensuring that everyone and every community has enough for a decent life and that everyone has opportunities to see improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity (Gibson, 2006, p. 174). Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: culture, transportation, multiple usage, and vulnerable populations. Each of these are briefly discussed in the context of the sustainability theme.

Cultural tourism started to be recognized as a distinct product category in the late 1970s when tourism makers and tourism researchers realized that some people travelled specifically to gain a deeper understanding of the culture or heritage of a destination. This means cultural aspects should be integrated into planning processes, including religion, special events, and activities that are indicative or unique to areas such as waterfronts (Frey, 2009). Cultural resources, if addressed appropriately in planning, are able to create employment, boost economic development and promote sustainable activities (Sepe, 2013). Overall, the waterfront should make a positive contribution to employment within the city, and planning should address local competencies and disadvantaged workers (Marichela, 2013). This is relevant to achieving regeneration, as the waterfront should lead to improvement in social dimensions and community targets associated with such issues as employment (Sairinen & Kumpulainen, 2006). Education

is also a significant aspect of culture that should be considered in waterfront planning and include participatory techniques that focus on full involvement and engagement addressing socio-ecological issues and impacted sectors within the community. Regarding accessibility, transportation and mobility is an important aspect of waterfront sustainability planning. Transportation should be focused on multi-modal options; walking, cycling, carpooling, and public transit to meet and balance mobility with active living needs. For example, transportation routes through the city that link to and highlight the waterfront and connect to neighbouring areas are critical (City of Toronto, 2019, pp. Ch 2., p. 4). Lastly, vulnerability assessment is a structured process for identifying the vulnerability of human and natural systems to climate change. Vulnerability is also related to adaptive capacity. Increasing adaptive capacity will result in less vulnerable populations and greater long-term sustainability. Vulnerability assessment should consider socio-economic and physical factors, as well as interventions through initiatives such as better access to health care initiatives, better transportation infrastructure, and healthier buildings and living spaces (Richardson & Otero, 2012, p. 19).

3.4.4 Precaution and Adaptation

A successful waterfront plan should understand the risks of serious or irreversible damage to the foundations of sustainability, plan to learn, design for surprise and manage for adaptation (Gibson, 2006, p. 174). This includes ensuring the availability and practicality of back-up alternatives and establishing mechanisms for effective monitoring and response (Gibson, 2006, p. 174). Additionally, precaution is needed because human and ecological effects must be addressed as factors in open, dynamic, multi-scalar systems, which are so complex that full description is impossible, prediction of changes uncertain, and surprise likely (Gibson, 2006, p. 72). Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: land use/ spatial planning, waste and

pollution/ baseline monitoring, provincial water quality standards, resilience, precautionary principle, zoning, and reversibility. Each of these are briefly discussed in the context of the sustainability theme.

Land use planning is one of the most effective processes to facilitate local adaptation to climate change and integration of sustainability. This should include the creation of;

- Official plans – sets out the long-term vision, goals, and objectives for the development of the community: local conditions, public consultations, review by advisory committees.
- Zoning – dividing the community into zones with restrictions that apply.
- Land subdivision and development controls – subdivision controls for developers who want to transform an area of land, development permits and development zones.
- Design guidelines – preferred practices in the design of certain aspects of development project.
- Environmental impact studies (Richardson & Otero, 2012, p. 3).

Planning should be regarded as having both strategic and reflexive potential, implying an ability to solidify choices and alternative development paths. Adaptation suggests proactively and strategically managing and influencing change while facilitating the needs of the city without further harming the environmental conditions (Storbjork & Hjerpe, 2014). To ensure accountability, monitoring should be a critical component of land use planning. Planning can be defined as either compliance or effects monitoring. Compliance monitoring looks at whether a project has been implemented according to the commitments made in environmental assessment, as well as monitoring framework for all phases of construction and commission. Effects monitoring is used after environmental assessment project approval to verify expected environmental effects and determine if additional impact management measures are required

(Government of Ontario, 2017). Monitoring can be based on citizens, functional levels, environmental conditions, and usage of the waterfront area to determine if the project has met goals (Herzele & Wiedemann, 2003). Ultimately, action research should be utilized to systematically test, monitor, and evaluate good practice techniques throughout the entirety of the waterfront planning process (Smith & Ferrari, 2012). To practice reversibility and resilience, the precautionary principle acts as a guideline in scientific decision making to encourage responsibility towards the treatment of the environment. As adapted from Kriebel et al. (2001), the principle has four central components;

- Preventative action in the face of uncertainty.
- Shifting the burden of proof to the proponents of an activity.
- Exploring alternatives to potentially harmful actions.
- Increasing public participation in decision making.

It is argued that precautionary policies create opportunities and challenges for planners and scientists to think differently about the conduction of actions and presentation of results (Kriebel, et al., 2001, p. 1). The purpose of the precautionary principle is to encourage the policies that protect human health and the environment in the face of uncertain risks. The original concept arose to combat problems such as climate change, ecosystem degradation, and resource depletion that continue to grow more rapidly than society's ability to identify and correct them. Now, the principle acts as an integral part of the planning process to ensure best and sustainable practices (Kriebel, et al., 2001, p. 1).

3.4.5 Resource Maintenance and Efficiency

Gibson (2006) explains this theme as reducing the extractive damage, avoiding waste, and cutting overall material and energy use per unit of benefit. This theme mandates a principle of

action that attempts to combine ecological, economic, and social objectives in a way that does not deplete resources and that is as efficient as possible. Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: optimization, conservation, minimal environmental effect, and proactivity. Each of these are briefly discussed in the context of the sustainability theme.

Optimization and minimal environmental effect are contributors to maintaining a resourceful and efficient planning and construction throughout project process. This can be achieved through some of the following;

- Minimizing energy consumption and recycling materials.
- Integration of waterfront development into city structures and infrastructure.
- Maintenance costs are minimized, and deteriorating effects are not caused elsewhere.
- Questioning of efficiency; at what point does it become inefficient to preserve the existing systems (Niemann & Werner, 2016).
- Transportation efficiency; integrated and connected systems.
- Address risks or problems identified through monitoring.

  (Wood, 1965)

To achieve this efficiently, one valuable aspect of planning is to maintain a conservation approach to revitalization that does not require a complete reconstruction of the waterfront area. This includes improving the appearance of an area through recalling the historical identity values as well as conserving and preserving old buildings where possible (Keyvanar, et al., 2018, p. 2). Lastly, proactivity refers to taking initiative with planning models and approaches to challenges which keep sustainable concepts in mind throughout the process to mitigate future problems.

Overall, this is intended to mitigate continued resource maintenance in the future and implement efficient practices (Hadayeghi, Shalaby, & Persaud, 2007).

3.4.6 Socio-Ecological Civility

Gibson (2006) describes socio-ecological civility as inclusion of individuals, communities, and other collective decision-making bodies to apply sustainability requirements through transparency, awareness, and collective responsibility (Gibson, 2006, p. 174). Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: advisory committee, stakeholders, community participation, and public consultation. Each of these are briefly discussed in the context of the sustainability theme.

Overall, the waterfront plan should take a community owned approach that considers all input equally, linking sustainability goals and initiatives to community partners that are best suited to engage them (Stuart, Collins, Alger, & Whitelaw, 2016). Often, this is best organized and developed by an advisory committee which ensures equal input and communication throughout the entirety of the planning and construction process (Ismail & Said, 2015). O'Faircheallaigh (2010) identifies the various attributes that should be included in a socio-ecological civility approach (Table 4.0) including public input, shared decision-making, and shared decision-making power.

TABLE 4.0: *A framework developed by O'Faircheallaigh (2010) displaying the various attributes considered by a socio-ecological civility approach. This involves broad and specific purposes to guide maintaining equal public and community involvement. These purposes are recommended to be utilized in the entirety of the waterfront sustainability project.*

Broad Purpose	**Specific Purpose and Activities**
Obtain public input and decisions taken elsewhere	• Provide information to public • Fill information gaps • Information contestability • Problem solving and social learning
Share decision making with public	• Reflect democratic principles • Democracy in practice • Pluralist representation
Alter distribution of power and structures of decision making	• Involve marginalised groups • Shift the locus of decision making • Entrench marginalization

(O'Faircheallaigh, 2010, p. 20)

Participatory planning should address the integration of ecological principles and requires the incorporation of physical environmental, social and economic characteristics into planning (Ling, Hanna, & Dale, 2009, p. 231). Ultimately, the population should be well informed and involved in the decisions and processes from the very beginning, including ecosystem and biodiversity conservation as well as the ability to link conservation with quality of life of individuals, groups, and communities (Jelovac, 2013; Jacobson, McDuff, & Monroe, 2015). One process to utilized

by advisory committees to ensure stakeholders, community, and public are involved is by social impact assessment (SIA). SIA is the method of analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative of development and planning interventions (Sairinen & Kumpulainen, 2006, p. 123). The main attributes are displayed in Table 5.0.

TABLE 5.0: *A framework developed by Sairinen & Kumpulainen (2006) displaying the main attributes of SIA which apply to maintaining socio-ecological civility. The left columns are the main attributes while the right columns are the defining characteristics of each.*

Resources and Identity	• Main characteristics and strengths of the area • Opinions of the environmental, cultural, and historical values • Significant to the visual, social, and cultural identity
Social Status	• Role of the public • Role of social/ private housing • Segregation and or gentrification processes
Access and Activities	• Accessibility for the public • Traffic and transportation • Pathways and recreation
Waterfront Experience	• Presences of water • Restorative experiences, important of visual messages, physical touch, tastes, voices, sounds

(Sairinen & Kumpulainen, 2006, p. 125)

3.4.7 Socio-Ecological Integrity

According to Gibson, sustainability must aim to foster and preserve socio-ecological systems from the family to the global levels, that are dynamic and adaptable, satisfying, resilient and therefore durable (Gibson, 2006, p. 173). Ultimately, this refers to the physical environment and the associated social actors an institution. Based on the literature reviewed for this research, the following attributes were selected that are associated with this Gibson (2006) theme including: heritage conservation, ecosystem approach, environmental sensitive areas (ESA), and strategic environmental assessment (SEA). Each of these are briefly discussed in the context of the sustainability theme.

Waterfront areas are commonly situated on a waterbody with extensive development history. This history, in many cases, is expressed through buildings and structures that have historical importance. The planning of waterfronts must consider the tensions between the need for economic development and the need to maintain unique heritage resources (McCarthy, 2004). The preservation of historic buildings has entered many waterfront revitalization strategies in the past couple of years. The ‘preservation movement’ is considered a positive contribution to the modern waterfront movement as many historic buildings are located on waterfronts and there is a desire to preserve buildings and recognize the past (Donofrio, 2007, p. 1). Thus, waterfront redevelopment works towards the preservation and adaptive reuse of historic buildings and precincts, favouring a restorative approach that makes for a richer community (Ali, et al., 2018). The ecosystem approach takes into consideration a number of interacting aspects including: clarification of transboundary interactions with neighbouring areas, portrayal of system dynamics, consideration of public attitudes, perceptions and behaviour, and acceptance of limits of tolerance to human stresses on the environment (Lee, Regier, & Rapport, 1982, p. 507). The ecosystem approach involves promotion of appropriate economic activities that ensure resilience

of ecosystems, communities, and adopt a precautionary approach that aims to not just avoid further damage but also reduce stresses and enhances the integrity of ecosystems and communities (Gibson, Alexander, & Tomalty, 1997). ESA's are landscapes which require management to protect them from adverse human impact. Commonly, these are areas within ecosystems whose natural balance must be maintained, preserved, and protected as they are vital to the long-term maintenance of biological diversity, soil, water, or other natural resources both on site and in regional context (Eagles, 1984). In waterfront planning, these are often associated with the water such as wetlands, river valleys, and other important natural features. Lastly, SEA evaluates the environmental impacts of policies, plans and programs and has emerged to integrate ESA and comprehensive planning to promote urban sustainability. This considers a broader scope of impacts (such as cumulative, secondary, and direct impacts) than project level ESA. SEA incorporates sustainability throughout decision making; from policies, plans and programs to projects (Shepherd & Ortolano, 1996). Once the agency identifies the environmental impacts, an environmental impact statement is developed to inform the public and the agency decision maker about the impacts prior to the final decision (Evans, 2012).

4.0 RESULTS AND DISCUSSION

4.1 Total Reference Count Analysis (Nodes)

The results of coded references for of the three cases – Kingston, Barrie and Toronto were tabulated and displayed visually (Figure 2.0). The total reference count for each node for all documents listed under Toronto, Kingston, and Barrie are displayed in Figure 2.0. In total, Kingston had the greatest number of coded references (all seven of Gibson's sustainability themes) at 319, followed by Barrie at 271 and Toronto at 211, based on the Waterfront Sustainability Evaluation Framework which was developed. On average, Livelihood Sufficiency

and Equity had the highest number coded references between all three cities and Socio-Ecological Civility had the least number of coded references, however, Kingston is an anomaly in this node (Refer to Chapter 4.3.6).

Examining each municipality identified common trends of where each city is lacking and where best management practices in support of sustainability are more commonly adapted. While all plans have strengths and weaknesses, it can be inferred that Kingston's plans best meet the Sustainable Waterfront Planning Criteria presented in Chapter 3.0. While Kingston was seen to be most consistent with the waterfront criteria, Barrie and Toronto also displayed great variation between adopted concepts and attributes. It can also be inferred that Kingston met many of the aspects of the framework due to the integration of the Waterfront Master Plan with the Kingston Sustainability Framework, implementing many of the desired sustainability aspects throughout the planning process. It is important to note that these results cannot infer that one plan is more successful than another due to the number of manipulated variables within the case studies, and instead portrayed which themes were most prominent.

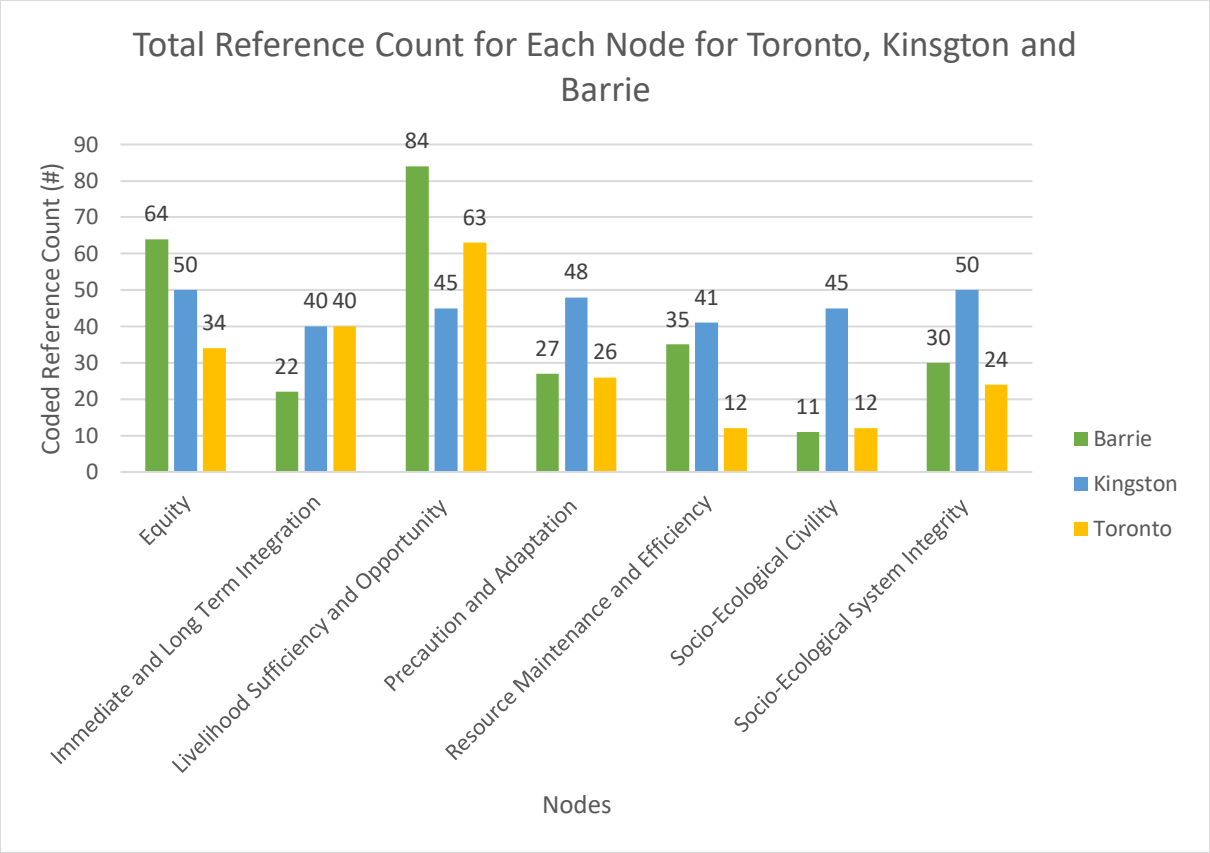

***Figure 2.0*:** Total Coded Reference Count for Toronto, Kingston, and Barrie developed from NVIVO 12. Each node was determined from the Waterfront Sustainability Framework in Chapter 3.4 and coded based on the number of references in documents from Table 3.0 (Chapter 3.3).

4.2.1 Equity

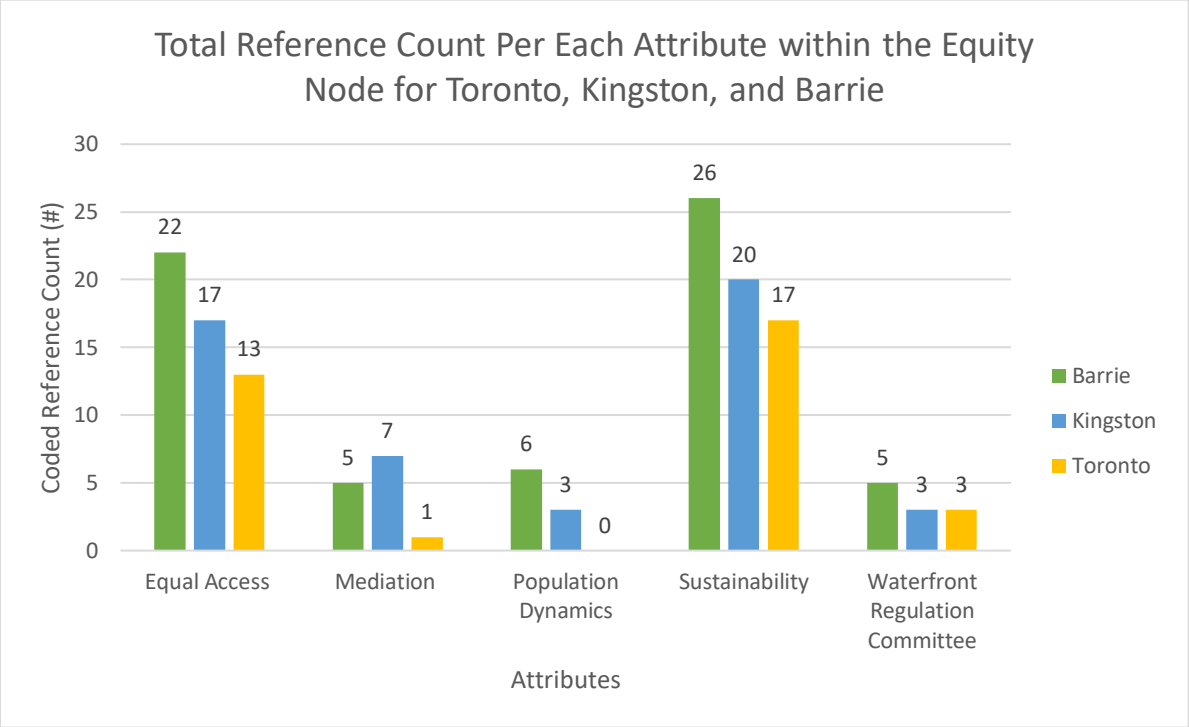

Figure 3.0: Total Reference Count Per Each Attribute within the Equity Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 3.0 indicates that for this sustainability theme, sustainability was the highest coded attribute (63), followed by equal access (52). Population dynamics was the lowest coded theme (9). Additionally, Barrie most successfully met the equity node, with the most coded references for each attribute (64), except for mediation, which Kingston is coded higher for (7). Toronto consistently was coded the lowest within the equity node, and no coded references were identified for population dynamics.

4.2.2 Immediate and Long-Term Integration

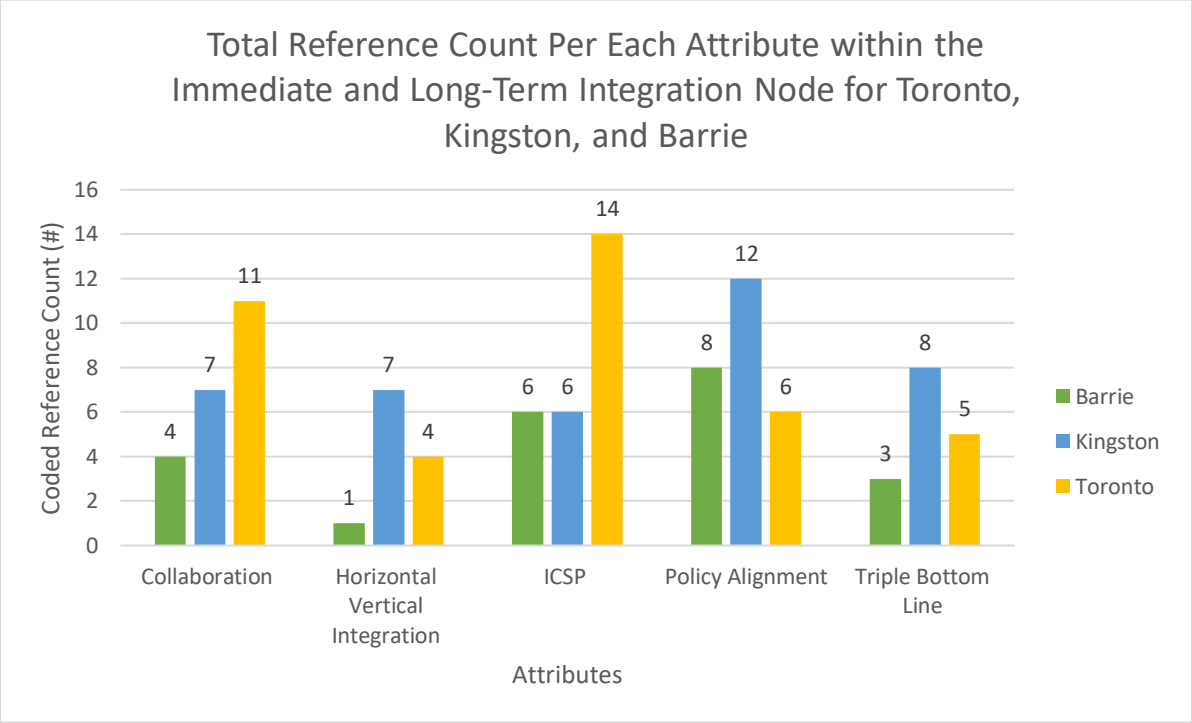

***Figure 4.0*:** Total Reference Count Per Each Attribute within the Immediate and Long-Term Integration Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 4.0 indicates that for the sustainability theme, ICSP (26) and Policy Alignment (26) were the highest coded attributes. Kingston and Toronto had the same number of total coded attributes for this sustainability theme (40), however Toronto had higher coded attributes in Collaboration (11) and ICSP (14) while Kingston had higher coded attributes in Horizontal Vertical Integration (7), Policy Alignment (6), and the Triple Bottom Line (8). Collectively, Barrie had the lowest number of coded attributes (22).

4.2.3 Livelihood Sufficiency and Opportunity

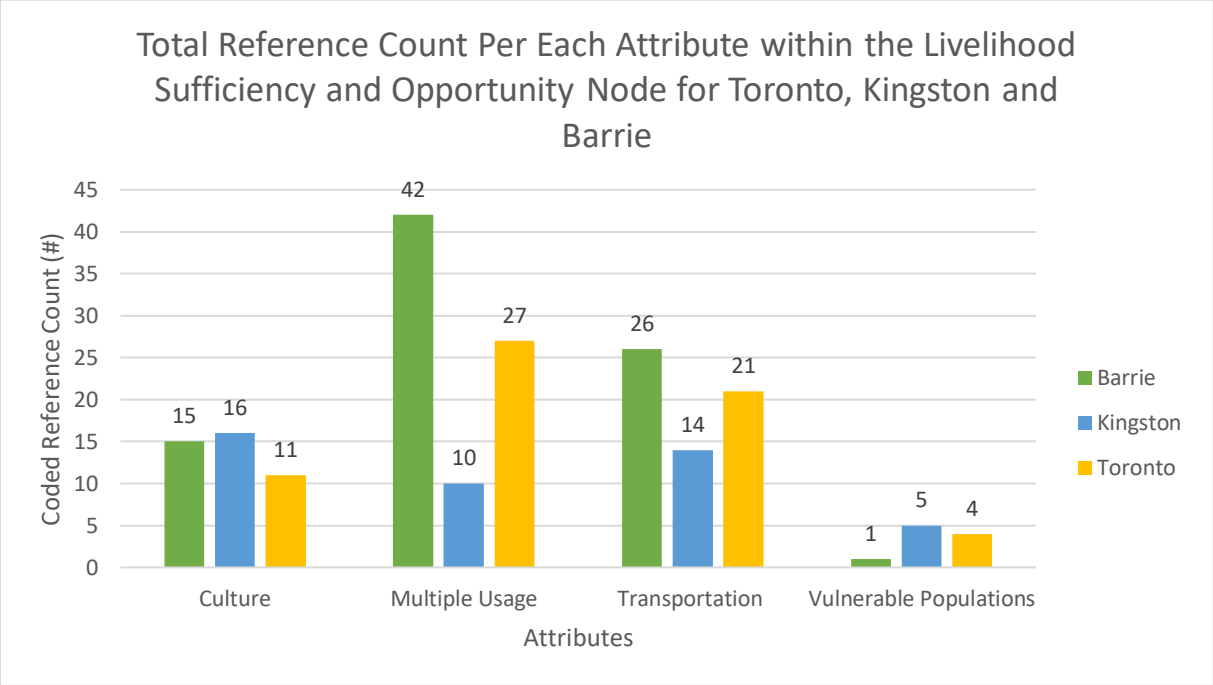

***Figure 5.0*:** Total Reference Count Per Each Attribute within the Livelihood Sufficiency and Opportunity Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 5.0 indicates that for this sustainability theme, multiple usage was the highest coded attribute (79) while the lowest coded attribute was vulnerable populations (10). Barrie, on average, most successfully met the livelihood sufficiency and opportunity node (84) while Kingston overall had the lowest number of coded attributes (45). This was predominantly due to Kingston's attribute count in multiple usage (10) and transportation (14), whereas Barrie had a score of 42 in multiple usage.

4.2.4 Precaution and Adaptation

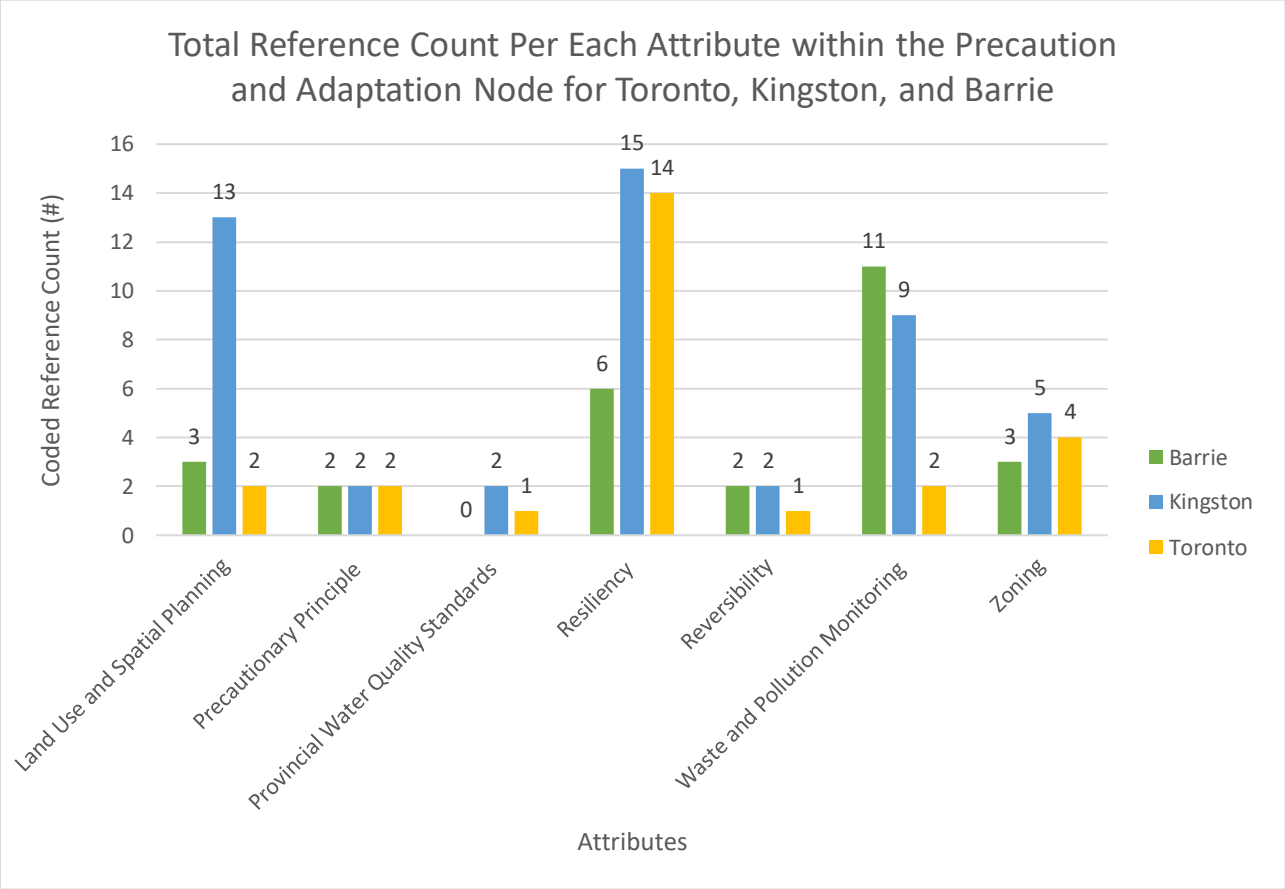

***Figure 6.0*:** Total Reference Count Per Each Attribute within the Precaution and Adaptation Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 6.0 indicates that for the sustainability theme, Resiliency was the highest coded attribute (35) while Provincial Water Quality Standards was the lowest coded attribute (3). The difference between these was significant by 32 references. Overall, Kingston most successfully met the Precaution and Adaptation node (48) while Toronto had the lowest number of references (26). It is apparent that Kingston has predominantly more references in Resiliency (15) and Land Use and Spatial Planning (13) than Barrie and Toronto.

4.2.5 Resource Maintenance and Efficiency

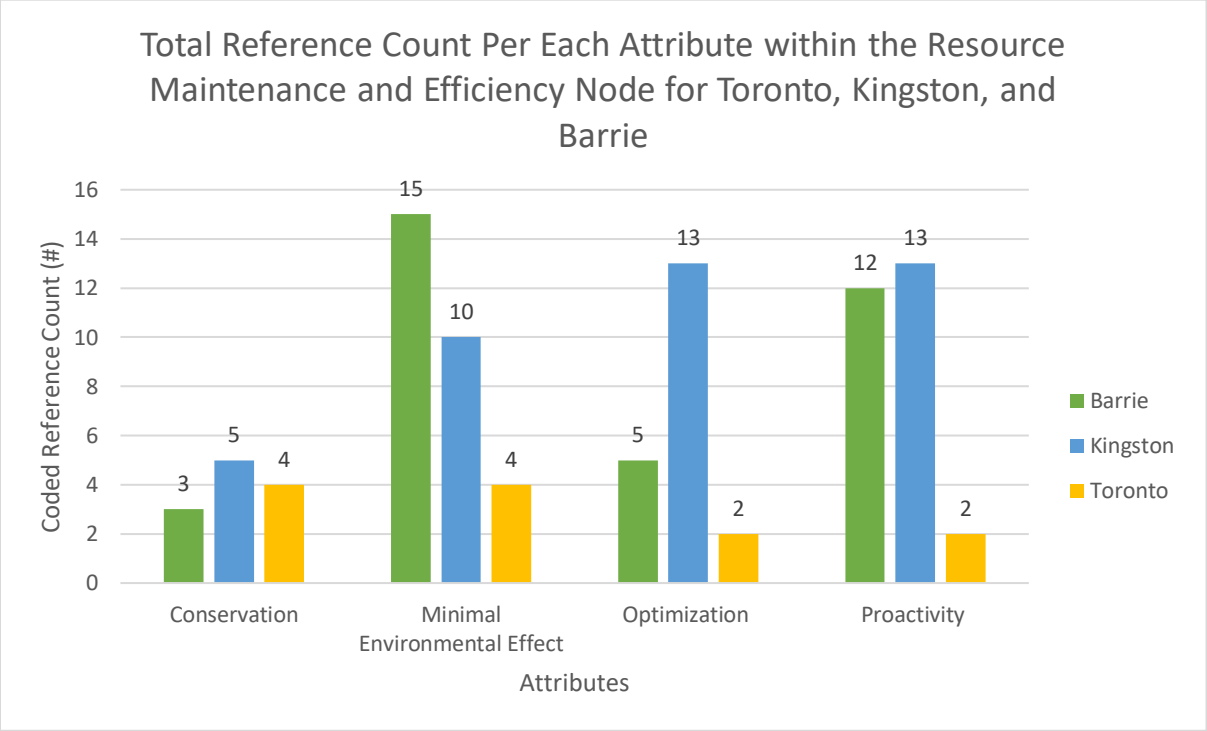

***Figure 7.0*:** Total Reference Count Per Each Attribute within the Resource Maintenance and Efficiency Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 7.0 indicates that for the sustainability theme, Minimal Environmental Effect had the highest number of coded references (29) and Conservation had the lowest number of coded references (12). Overall, Kingston most successfully met the Resource Maintenance and Efficiency node (41), while Toronto had significantly lower references (12). The greatest difference between Barrie and Kingston was due to the coded references in Optimization, in which they differed by 8 references.

4.2.6 Socio-Ecological Civility

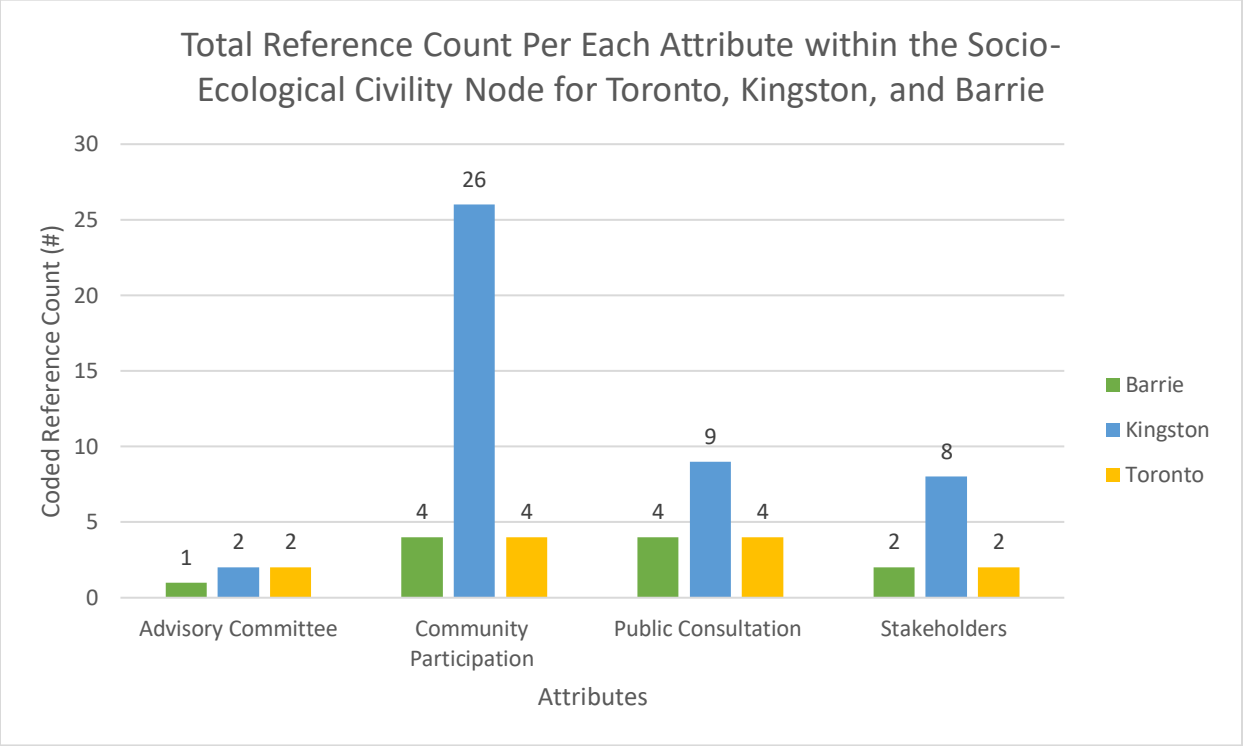

***Figure 8.0*:** Total Reference Count Per Each Attribute within the Socio-Ecological Civility Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 8.0 indicates that for the sustainability theme, Community Participation was predominantly coded the highest (34), while Advisory Committee was coded the lowest (5). Community Participation was drastically higher, however, due to the coded references associated with Kingston. Kingston therefore was most successfully met the Socio-Ecological Civility Node (45), while Barrie had the lowest number of coded references (11) by 1 reference compared to Toronto (12).

4.2.7 Socio-Ecological System Integrity

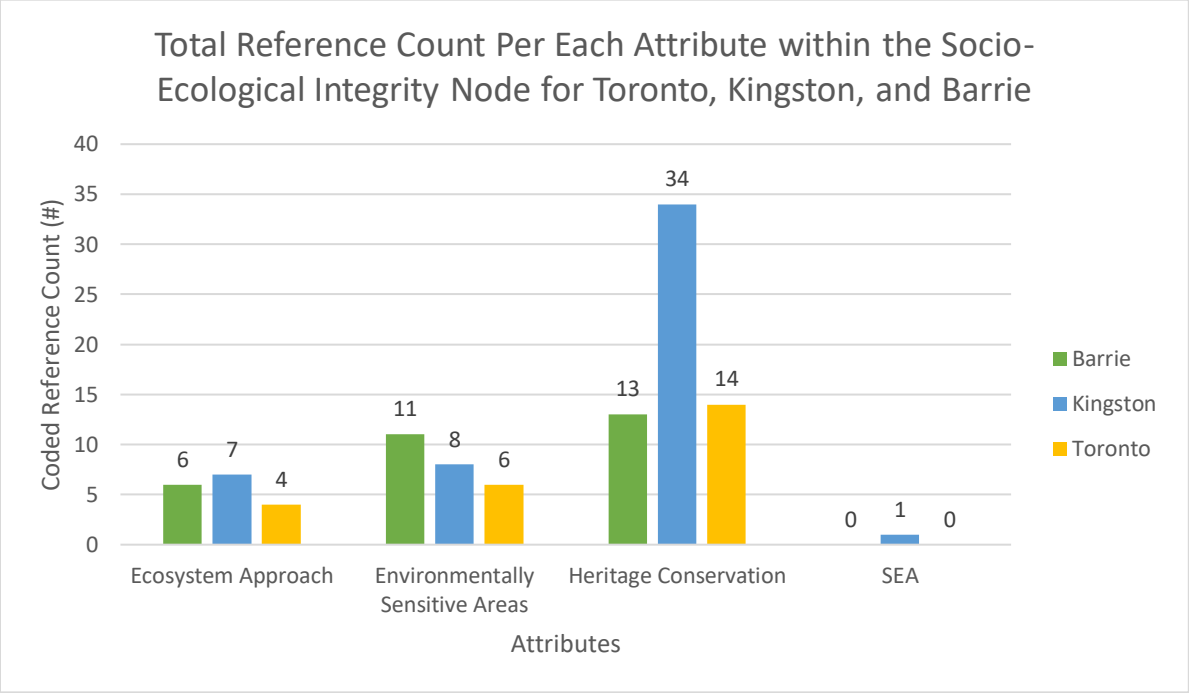

***Figure 9.0*:** Total Reference Count Per Each Attribute within the Socio-Ecological Integrity Node for Toronto, Kingston, and Barrie Developed from NVIVO12.

Figure 9.0 displays that for the sustainability theme, Heritage Conservation had the highest number of coded references (61), while SEA had the lowest number of coded references (1). Overall, Kingston most successfully met the Socio-Ecological Integrity node (50), due to the highest number of references in Heritage Conservation. Toronto had the lowest number of coded references (24). Barrie also successfully met this node (30), however, due to the large number of references for Kingston in Heritage Conservation, did not score as high.

4.3 Discussion

Overall, the results of the document analysis did portray insights into waterfront planning from a sustainability perspective. The analysis also provided insight into the effectiveness of the Waterfront Sustainability Framework developed (see Chapter 3.4) to evaluate and assess the condition and state of sustainability contributions within each specific case study city.

Additionally, based on the results, main differences between the waterfront sustainable plans are presented based on the sustainable waterfront evaluation framework developed, as well as which parts of the framework were not as important and might be considered less significant from a waterfront planning perspective. The discussion is presented around each of the sustainability themes.

4.3.1 Equity

Sustainability and equal access were the two highest coded attributes within the equity node, consistently ahead of 'mediation', 'population dynamics', and 'waterfront regulation committee'. Analyzing each document indicated that sustainability was perhaps the integral foundation of all plans which aligns with the literature review (Stuart, Collins, Alger, & Whitelaw, 2016; Gibson, 2006). Equal access was consistently another highly coded node. This indicates that waterfronts within Ontario are continuing to support the ideology that waterfronts should remain as public open spaces that achieve equality and inclusion within cities. Success with this sustainability theme in each case study was a result of consideration in the plans to waterfront uses, land properties, and public participation within the decision making processes (Attia & Ibrahim, 2018). As determined from the literature review, sustainability is a core-generic criterion to waterfront planning processes, as well as regeneration and assessment (Tomalty, 2013; Stuart, Collins, Alger, & Whitelaw, 2016; Gibson, 2006). Equity spans aspects of planning such as community involvement, inclusive decision making, socio-ecological civility, long-term integrative planning, and responsibility through stewardship (Stuart, Collins, Alger, & Whitelaw, 2016, p. 1).

Barrie had the highest number of coded references within the sustainability attribute. The Barrie OP notes that Barrie will strive for sustainable development through the following efforts:

> Development that is sensitive to the environment can be achieved through sound land use planning and transportation policies; through the development of energy and resource conservation programs; through the integration of waste management programs and the application of environmentally sensitive engineering, such as Best Management Practices (Barrie Planning and Services Department, 2014, p. 16).

The Barrie Waterfront and Strategic plan also encourages a "new vision and revised principles that describe the core qualities that define the waterfront, and outline key directions protecting and enhancing those qualities over time" (City of Barrie, 2013, p. 1). The plan then successfully and clearly outlines how each aspect of the planning process will be applied to sustainability principles. Therefore, the Waterfront and Marina Plan (2013) incorporates sustainability principles within the discussion, whereas Kingston presents a more segregated approach, as discussed below. Overall, Barrie was most successful in addressing the sustainability and equity node.

Kingston had the second highest number of coded references within the sustainability attribute, with evidence displaying that the civility does meet the Equity node. This was predominantly recognized throughout the city's OP which states that the "City's goal of making itself the most sustainable municipality in Canada is reflected throughout the document" (City of Kingston, 2019, p. 2). Sustainable development was consistently referenced, addressing:

> Conserving natural habitat and built resources; reducing pollution and rehabilitating polluted areas; applying conservation practices; reducing energy consumption; promoting green infrastructure; enhancing the green economy and low carbon economy; supporting vulnerable populations; encouraging innovative and high-quality design; and, arranging

> and phasing land uses in a manner that reduces the consumption of land and energy and prevents premature public spending" (City of Kingston, 2019, p. 39).

This highlights a well-rounded and encompassing approach that Kingston is taking to sustainability. Additionally, the Sustainable Kingston Plan (2010) consistently addresses how to incorporate sustainability into all planning processes. However, this is a separate official document to the Waterfront Master Plan, and therefore creates separation between the concepts in comparison to Barrie. Yet, the Waterfront Master Plan presents the goal to encompass "a place where all residents and visitors can participate in a variety of land and water-based pursuits along an integrated system of exceptionally designed spaces and connections that contribute to the vitality of its natural and man-made systems" (City of Kingston, 2016, p. 59). Thus, Kingston displays success with sustainability and equity attributes.

Lastly, Toronto consistently scored the lowest in the equity node and sustainability attribute. While Barrie and Kingston clearly discuss how sustainability would be achieved, the Toronto Waterfront Plan was based on the nine principles presented by David Crombie (1992), as discussed in Chapter 2.3. This is displayed in the executive summary of the Central Waterfront Part II Plan, which specifically notes "Promoting a Clean and Green Environment" to help "shape sustainable waterfront communities" (Dill & Bedford, 2001, p. 1). Sustainability was additionally recognized in the official plan as "meeting the needs of today without compromising the ability of future generations to meet their needs" (City of Toronto, 2019, pp. 3-1). Thus, although Toronto notes sustainability throughout the planning documents, it was determined to be the least integrated within the plan compared to Kingston and Barrie.

4.3.2 Immediate and Long-Term Integration

Attributes within this node were sporadic for all three case studies. Both Kingston and Toronto had similar highest coded references which identified were Policy Alignment and ICSP, consistently ahead of 'collaboration', 'vertical and horizontal integration', and 'triple bottom line'. Barrie, in comparison, had the lowest coded references for all attributes.

The highest coded for Kingston was Policy Alignment which indicates that Kingston has success addressing immediate and long-term integration by "ensuring that public works are carried out in accordance with the Environmental Protection Act, Ministry of the Environment and Climate Change regulations, and any other applicable legislation, regulation or requirement" (City of Kingston, 2019, p. 270). Additionally, Section 10 of the OP addresses specific policy areas and secondary plans which other planning documents should be aligned with (City of Kingston, 2019, p. 429). This is also noted within the Kingston Waterfront Master plan as integrating existing plans to identify additional improvements to projects and aid in establishing budgets (City of Kingston, 2016, p. 18).

The highest coded for Toronto was ICSP. Toronto addresses ICSP directly within the Central Waterfront Plan II, with a section devoted to "Creating Dynamic and Diverse Communities" (Dill & Bedford, 2001, p. 1). This clearly addresses immediate and long-term integration by inspiring new waterfront communities to be "acclaimed for their high degree of social, economic, natural and environmental health and cultural vibrancy" (Dill & Bedford, 2001, p. 1). It was also recognized that the Toronto planning documents intended to improve communities throughout the city, even if they are distanced from the waterfront area, to create long-term success. As noted in the Toronto OP, "All communities should benefit from and share the

rewards and advantages of living in Toronto" (City of Toronto, 2019, p. 27). This clearly addresses immediate and long-term integration.

In the case of Barrie, which was coded lowest for all attributes, it was determined that the immediate and long-term integration is inferred throughout the plans, such as "through the development and implementation of a formally established set of goals, objectives and policies" (Barrie Planning and Services Department, 2014, p. 9). Additionally, the OP lists "Community Improvement Planning Goals" (Barrie Planning and Services Department, 2014, p. 46), and "actions and improvements to the Barrie Waterfront and Marina Strategic Plan that are intended to… conform with growth management and long-term financial strategy and implementation of the master plans" (City of Barrie, 2013, p. 45). However, the documents do not explicitly suggest attributes as did Kingston and Toronto. The documents that were selected for each case study were developed based on policy alignment or tiering and therefore have similar policy with respect to immediate and long-term integration. Tiering is that higher level documents set out policies that are to be followed by planning documents that get closer to the ground in terms of development (Whitelaw, 2020, personal communication).

ICSP stood out as an important attribute as it reflected cities were embracing re-development by implementing community improvement as an aspect of waterfront regeneration, providing enhancements beyond the waterfront area to other areas of the city. This was noted in the Toronto ICSP, and seen in Kingston with the Sustainable Kingston ICSP which aims to integrate sustainable practices based on cultural, economic, environmental and social pillars of sustainability into all public and private plans (Corporation of the City of Kingston, 2010, p. 1; City of Toronto, 2019, p. 27). These results were highly comparative with the literature review,

which suggests that the integration of waterfront planning within the city has the capability to redefine the role and image of the entire city (Bruttomesso, 2004).

4.3.3 Livelihood Sufficiency and Opportunity

Based on the document analysis for this research, it was determined that all three plans generally address Livelihood Sufficiency and Opportunity based on Gibson's definition of sustainability themes. This theme is defined by ensuring everyone and every community has resources for a decent life and opportunities to see sustainable improvements (Gibson, 2006, p. 174). Evidence from each case study display this. Barrie's OP states:

> The city's waterfront, with its parks, trails, facilities and events is recognized as a major contributor to the lifestyle enjoyed by its citizens, as a central hub and meeting place, as an asset to the historic downtown area, and as an attraction for tourists as part of the City's economic base (Barrie Planning and Services Department, 2014, pp. 2-3).

This displays that the waterfront is determined to be an area which can positively influence the lives of people living within the city. Additionally, the OP and Waterfront Plans aimed,

> To encourage the creation of complete communities through a mix of land uses serving the residential planning areas in order to maximize convenient access to community facilities and service (Barrie Planning and Services Department, 2014, p. 64).

Similarly, the Sustainable Kingston Plan is based on a 'Cultural Pillar' which focused on "the fundamental objective of any sustainable community is the promotion of human well-being through enhancing both the Quality of Life and Quality of Place" (Corporation of the City of Kingston, 2010, p. 22). This is determined to meet livelihood sufficiency and opportunity by nurturing "individual and community identity, promote social cohesion, and contribute to the

creation of social capital" (Corporation of the City of Kingston, 2010, p. 22). A highlight is that Kingston also has a dynamic "Community Action Inventory" for community members to post the actions they are contributing to the implementation of sustainability (Corporation of the City of Kingston, 2010, p. 4).

Finally, Toronto's Central Waterfront Plan II states:

> A Toronto Imperative: the size of this initiative, the prominence of the Central Waterfront as Toronto's front porch and the land use activities that will be attracted to this extraordinary setting will all have a profound influence on our city's prosperity, standard of living and, ultimately, our quality of life. The Central Waterfront is crucial to our city's future and wealth creation for all citizens (Dill & Bedford, 2001, pp. 1-2).

By focusing on the potential that the waterfront can provide to the livelihood of the city, Toronto also aims to ensure that any new waterfront communities will be "acclaimed for their high degree of social, economic, natural and environmental health and cultural vibrancy" (Dill & Bedford, 2001, pp. 3-4). Overall, it is apparent that city cases address this theme and are working towards a goal of creating for the communities and inhabitants involved.

The concrete reoccurring attribute within this node was multiple usage, consistently referenced higher than 'culture', 'transportation', and 'vulnerable populations'. Multiple usage can refer to diversity of activities encouraged within the waterfront area, as well as availability of mobility networks and potential for economic development; generally, the multiple functions the waterfront serves and the amenities it provides for the people within the city (City of Barrie, 2012, p. 3). For all case studies, this was displayed by the encouragement of the waterfront to promote culture, education, economy, and transportation modes within the waterfront area. The

attribute consistently indicated that sustainable waterfront planning desired waterfronts to be environments that can serve multipurpose properties and appeal to multiple stakeholders and city needs. Sustainable Kingston aims to provide an experiential quality at the waterfront which is "universal across multiple interests, user groups, and expectations" (City of Kingston, 2016, p. 24). Additionally, Kingston's OP promoted multi-modal actions such as; open space areas, shared use corridors, inter-modal coordination, pedestrians, pathways, and easy water access (City of Kingston, 2019, pp. 166, 270, 282). The City of Toronto OP focused on a "dynamic mixture of opportunities for everyone to live, work, learn and play" within a "connected city that recognizes all aspects of our daily lives are linked" (City of Toronto, 2019, pp. 3,4). This is intended to be achieved by "high quality transit services, including priority measures for buses and streetcars, combined with urban design and traffic engineering practices that promote a street that is safe, comfortable, and attractive for pedestrians and cyclists" (City of Toronto, 2019, p. 17). Additionally, Toronto focused on enhancing recreational activities and removing barriers that connect communities (Waterfront Toronto, 2018, p. 47).

Barrie most successfully met this attribute with the most coded references for multiple usage. Barrie's OP lists goals to "encourage the creation of complete communities with a diverse mix of land uses, and range and mix of employment and housing types, high quality public open space and easy to access local stores and services" (Barrie Planning and Services Department, 2014, p. 30). This is continually recognized throughout all planning documents, specifically highlighting the waterfront as an area that has the ability to promote "public ownership, community access, recreation, tourism and downtown revitalization" (City of Barrie, 2012, p. 1). The success of multiple usage throughout Barrie's waterfront planning process is reflected in the city goal for "multi-use and multi-modal thinking that predominates contemporary urban planning and

design" (City of Barrie, 2012, pp. Ch 2, p1.). The consistency with meeting this specific goal throughout the Waterfront and Marina Strategic Plan are evidence of this.

Ultimately, urban land use and regeneration involves public, private, community and voluntary sectors to improve the quality life for all (Roberts & Sykes, 2008). Due to the diverse needs of cities, multiple usage is an integral aspect of the urban and waterfront planning process and all three cases evaluated work toward this goal. Of note is that 'vulnerable population' was a very low referenced attribute within all three plans. This is discussed in greater detail in Chapter 4.3.8.

4.3.4 Precaution and Adaptation

Land use and spatial planning and resiliency were the most coded attributes within the Precaution and Adaptation node, consistently higher than 'precautionary principle', 'provincial water quality', 'reversibility', 'water and pollution monitoring', and 'zoning'. Land use plans were clearly outlined in each city's official plan and encompassed waterfront areas as a stand-alone section (Barrie Planning and Services Department, 2014, pp. 87-88; City of Toronto, 2019, pp. Ch 4. 11,16,18; City of Kingston, 2019, p. 173). The documents also addressed corridors and connections integrated within land and spatial planning to protect environmental areas (commonly within waterfront areas). The Barrie OP notes the "importance of the conservation and preservation of the natural environment, included forested areas, wetlands, valley and stream corridors and waterfront linkages, air quality and water resources" to maintain ESA's (Barrie Planning and Services Department, 2014, p. 14). This is similar to the goals of Toronto and Kingston, however, Toronto also includes non-environmental corridors to apply to sustainability, such as "key cultural and heritage corridors which link the assets of the city with the water's edge" (Dill & Bedford, 2001, p. 2). Kingston, meanwhile, focuses on corridors to promote natural areas, as well as shorelines and significant woodlands to promote sustainable land use

and spatial planning (Corporation of the City of Kingston, 2010, p. 38). The focus on this attribute reiterates the importance of waterfront land and efficiency: meaningful use that will contribute to broader sustainability and optimization. The attribute of Connectivity is discussed further in Chapter 5.2.4. Kingston had predominantly higher land use and spatial planning than Barrie and Toronto due to the integration of land use and "land access" to ensure the City is acquiring and using land appropriately which was directly referenced throughout the document (City of Kingston, 2016, p. 21).

Resiliency within the plans was mostly referred to as planning which was adaptable over time considering the dynamic aspects of waterfront sustainability. As referenced in the City of Kingston Official Plan, "The ability of a system, entity, community or person to withstand shocks while still maintaining essential functions and to recover quickly and effectively", for example, ensuring precautionary approaches to sensitive environments, avoiding destabilization, withholding legislation, and prioritizing projects (City of Kingston, 2019, p. 30). The Toronto OP stated "to take care of what we have – to maintain our streets, water and sewer infrastructure and watercourses, parks and urban forest, cultural and recreation facilities, transit and City owned buildings and housing in a "state of good repair" (City of Toronto, 2019, p. 15). The Barrie OP does not directly reference resiliency but considers the concept throughout (Barrie Planning and Services Department, 2014). Instead, it is referenced in the Technical Memorandum as creating "a bold vision that is adaptable over time" (City of Barrie, 2012, p. 4). These references are representative of an approach to waterfront planning that attempts to address future generations and their needs. Overall, Kingston most successfully met this sustainability theme due to the highest coded references in livelihood sufficiency and opportunity, as well as resiliency compared to Barrie and Toronto.

4.3.5 Resource Maintenance and Efficiency

Regeneration is central to waterfront work, as it entails re-examining and revitalizing urban zones that are of considerable size and often located a short distance from the city center in the most resourceful and efficient way (Bruttomesso, 2004). Kingston most effectively met the resource maintenance and efficiency node. The Kingston Official Plan refers to resource efficiency as:

> Buildings and sites will be encouraged to promote energy efficiency, renewable energy systems, recycling, composting, and other methods of conserving or re-using materials and resources. In keeping with the intent of this Plan to foster sustainability, the City encourages the development of new industries where there is a mutually beneficial relationship between industries in the sharing of energy production or in recycling the waste of one industry into the production of products created by another (City of Kingston, 2019, p. 168).

Kingston was recognized as successful in this sustainability theme due to the 'Priority matrix' which is utilized to help determine which projects on the waterfront will be most beneficial and efficient to the entirety of the plan and sustainability progress (City of Kingston, 2016, p. 15). Once a design process and priority are considered for each site, more detailed and accurate cost estimates are possible (City of Kingston, 2016, p. 15). Although similar processes may be used by Waterfront Toronto and the Barrie Marina and Waterfront Strategic Plan, the process is not listed to similar extent and organized structure as Kingston.

The reoccurring attribute within this node was minimal environmental effect, consistently being ranked higher 'conservation', 'optimization' and 'proactivity'. Minimal environmental effect within the waterfront plans referred primarily to minimizing any effects on the public utility or

project may have on human health, the natural environment and cultural heritage resources (Barrie Planning and Services Department, 2014, p. 107). Barrie scored highest within this attribute due to the focus of the planning documents on protecting the value of the waterfront area. Barrie Technical Memorandum states that one of the most relevant sections of the plan is "Environmental Protection and Stewardship" which addresses the parkland system, natural heritage lands, and waterfront lands. Under this section, the waterfront is recognized as one of the City's most valuable assets and an important part of the parks system" (City of Barrie, 2012, p. 4). Therefore, Barrie has been successful in maintaining minimal environmental effects by prioritizing the waterfront and park areas surrounding, as well as resource maintenance and efficiency. Toronto, however, had the lowest number of coded references for this attribute. Minimal environmental effect is not directly referred to within the Toronto documents. The Toronto Central Waterfront plan instead references "Promoting and Clean and Green Environment" by "helping to sustain [the] natural environment by cleaning the air, recharging groundwater, cleaning [the] watercourses and limiting damage that might arise from flooding and soil erosion" (City of Toronto, 2019, p. 31). Thus, Toronto does not address "riparian species, shoreline plantings and buffers" alike Barrie Waterfront and Marina Strategic Plan (City of Barrie, 2013, pp. Ch. 3, p. 4). Barrie and Kingston most successfully met this sustainability theme, while Toronto met the theme most poorly.

4.3.6 Socio-Ecological Civility

Community participation was the highest coded attribute within this node, consistently being referenced higher than 'advisory committee', 'public consultation' and 'stakeholders'. This is reflective of how community participation has become an integral component of the municipal planning process, as documented in the literature review - increased citizen activism in public spaces has increased competition for valuable land, such as waterfront spaces, and sustainable

design (Thai, Rahm, & Coggburn, 2007). In all cities, plans were articulated to have been developed with extensive community input which displays the importance of this sustainability theme in the realm of waterfront sustainability planning (City of Barrie, 2012, p. 5; City of Barrie, 2013, pp. Ch 2, pg.3; Corporation of the City of Kingston, 2010, p. 3; Waterfront Toronto, 2018, p. 44). Kingston scored significantly higher on this attribute than Barrie and Toronto. This involved acknowledging that the inhabitants of cities are knowledgeable, have useful opinions about waterfront areas, and are invested in the waterfront's evolution and ongoing success. Community participation involved processes such as interviews with stakeholders and staff, public information centers, surveys and web information (City of Kingston, 2016, p. 4; Corporation of the City of Kingston, 2010, p. 25). Additionally, Kingston initiated a "Community Improvement Plan" which is a tool under the *Planning Act* that allows a municipality to direct funds and implement actions towards an area that is desirable due to community input, or for any other environmental, social, or economic development reason (City of Kingston, 2019, p. 32). This is reflective of the 'community-owned' approach which has become an integral aspect of prioritizing the community to benefit from sustainable urban revitalization and become transparent and attentive to community needs (Brunce, 2009). As urban regeneration is based on the idea that public, private, community and voluntary sectors must work together towards a clear and single aim to improve the quality of life for all, this theme was consistently included in Kingston waterfront planning documents (Roberts & Sykes, 2008).

It is determined that for other attributes, the coding references overall were reasonably low as the plans referenced each attribute once (such as a in the form of a goal or pillar) and did not reference the specific attributes again. This is because socio-ecological civility is inferred to be a

part of the entirety of the planning process due to document tiering (Whitelaw, 2020, personal communication).

4.3.7 Socio-Ecological System Integrity

Heritage conservation was the highest coded attribute within this node, consistently being referenced higher than 'ecosystem approach', 'environmentally sensitive areas' and 'SEA'. This complemented waterfront sustainability, and the rich historical significance that the waterfront has played within urban planning in the past, as determined in Chapter 2.1 of the literature review. All three cases indicate that each city was attempting to conserve cultural heritage resources such as buildings, structures, areas, districts, open spaces, landscapes, and artifacts with historical or architectural significance within regeneration initiatives; a reuse of older structures (Barrie Planning and Services Department, 2014, p. 20; City of Kingston, 2019, p. 35; Dill & Bedford, 2001, pp. Ch 4., pg. 4; Wrenn, 1984). Ultimately, based on the rich history of the waterfront areas of each case, recovery and upgrading of heritage was identified as important, along with these resources being made available for new uses (Bruttomesso, 2004). The plans recognized the rich history of waterfront planning development is concretely linked to the history of the area, acting as both an asset and sensitive area for both physical environmental and intrinsic preservation (City of Kingston, 2019, p. 35). Kingston most successfully met this attribute, and therefore the overall Socio-Ecological Integrity theme. This is because the Kingston OP, Sustainable Kingston, and Kingston Waterfront Plan is tiered based on Kingston's "rich and diverse heritage as a military, trading, commercial, and penal center" (City of Kingston, 2019, p. 18). Additionally, Kingston focused on both the physical conservation of cultural heritage, as well as 'living heritage' which referred to stories, practices, representations, expressions and associated knowledge which is transferred from generation to generation contributing to the significance of the area (City of Kingston, 2019, p. 35). Thus, heritage

conservation is recognized as an essential aspect of sustainable waterfront planning, to move derelict areas of cities into better, more sustainable environments (Dreyfuss, Mifsud, & Malderen, 2013). This evidence displays Kingston success in Socio-Ecological Integrity. Otherwise, all cases studies were similarly referenced. As SEA was coded extremely low within this sustainability theme, it will be discussed in greater detail in Chapter 4.3.8.

Figure 9.0 displayed that Toronto had the lowest number of coded references for the Socio-Ecological System Integrity sustainability theme. It can be inferred that Toronto did not fail to meet this sustainability theme, but instead did not compare as successfully as Barrie and Kingston for 'ecosystem approach' or 'environmentally sensitive areas'. This is because the Toronto Waterfront Plan was guided by the ecosystem approach, as well as nine principles developed by David Crombie that were applied to make the greater Toronto Waterfront Area healthier and more sustainable; clean, green, connected, open, accessible, useable, diverse, affordable, and attractive (Crombie, 1992, p. 12). Thus, the ecosystem approach and environmentally sensitive areas are determined to be integrated within these principles, instead of directly referenced within the chosen documents.

4.3.8 Less Important Aspects of the Waterfront Sustainability Evaluation Framework

Some of the attributes included in the Waterfront Sustainability Framework (See Chapter 3.4) resulted to be less important in the context of waterfront planning based on the analysis of the three cases. These aspects included:

Mediation: This attribute was rarely explicitly considered within all waterfront planning and official planning documents. The consideration of conflict was not addressed within the documents. Instead, all documents had guidelines for facilitating relationships between stakeholders and community rather than resolving conflict (City of Barrie, 2012, p. 5; City of

Barrie, 2013, pp. CH.2, p.3; Corporation of the City of Kingston, 2010, p. 3; Waterfront Toronto, 2018, p. 44).

Waterfront Regulation Committee: These types of committees were not directly referenced within waterfront planning documents as many of the documents used in analysis were authored by a waterfront regulation committee. It is also determined that the idea of a "Regulation Committee" is oriented towards Waterfront Toronto (Waterfront Toronto, n.d.), whereas Kingston has a 'Waterfront Working Group' (The City of Kingston, 2020) and Barrie does not have a specific group. The inclusion of this attribute in my evaluation framework can be tied to the focus of my literature review on the work of David Crombie, whose literature on the *Royal Commission of the Future of the Toronto Waterfront* (1992) and accompanying nine principles, guided a considerable amount of the development of my evaluation framework.

Vulnerable Populations: Specifically, vulnerable populations were rarely referenced within the document analysis. It can be inferred that vulnerable populations are instead referred to within 'Equal Access' and 'Community Participation', which is intended to encompass and encourage all populations within the city, particularly those less able to represent themselves. As waterfront regeneration has risen in popularity, the idea of power to the citizen has also displayed itself to be interworked within the concepts of sustainability planning and socio-ecological integrity. An increase in community and public participation is representative of the encompassing of all citizens within a city (especially those vulnerable or underrepresented), therefore the reason for a lack of explicit reference to this attribute.

Reversibility: After completing the document analysis, a common trend throughout all planning documents was perseverance and preparation for future, instead of planning for possible issues or

options for reversal of unfavorable actions. Specifically, the tone of waterfront planning documents was very positive and forward thinking, largely disregarding of the possibility of issues arising. This is in alignment with developing a waterfront plan which is intriguing and reflects positively on behalf of the city. While it is possible that plans for reversibility are considered, they are rarely included in the planning documents, understandably due to consensus that the plan is intended to be successful.

Provincial Water Quality Standards: While all waterfront planning documents alluded to maintaining a 'clean' environment, the plans did not specifically state adherence to provincial or municipal water quality standards. It can be determined that this is because water quality standard can be grouped in with monitoring processes on the waterfront (Barrie Planning and Services Department, 2014, p. 110; Corporation of the City of Kingston, 2010, p. 16; City of Toronto, 2019, pp. Ch. 2, p. 5). Additionally, water quality standards in Ontario are based largely on municipal and provincial storm water management, which can be separated from broader waterfront sustainability planning.

4.3.9 Strengths and Weaknesses of Methods

The greatest strength of this research was the collection and analysis of data through document analysis. While conducting the literature review and document analysis, literature and academic journals on sustainable waterfront design were readily available. The expanse of information available is suggestive of the diversity and focus on waterfront development throughout the evolution of the concept, as well as the large base of research that has been conducted and implemented on the topic to enhance urban planning practices. The opportunity to use NVIVO 12 also significantly reduced the complication of performing document analysis on substantial

quantities of documents and provided insights for my analysis. Several weaknesses within the methodology became apparent that future researcher might consider.

Availability of Information: The availability of information found in the literature review significantly guided the waterfront sustainability framework and reduced the possible inclusion of other themes; see discussion in future research needs. This is comparable to the concept of biased selectivity, as discussed by Yin (2012).

Attributes: It was determined that some of the themes as nodes were too broad and encompassed several aspects which could not be filtered within the attributes. For example, sustainability, as this applies to the entirety of the Waterfront Sustainability Evaluation themes. Additionally, Triple Bottom Line was determined to be a broad theme, as the City Official Plans and Waterfront Master Plans were commonly organized by focusing on social, environmental, and economic factors – however do not explicitly reference the triple bottom line.

Case Study Document Availability: A differing number of documents were available for each case study city, meaning that there was a discrepancy between the number of opportunities for a node to be coded within a city that has a larger amount of waterfront literature. However, the number of documents does inform on effectiveness of the planning documents within each city. For example, Toronto had 5 applicable planning documents, while Kingston had 4 and Barrie had 3. While this is not considered 'low retrievability' for any of the cities, this would have an effect if other case studies were to be completed (Yin, 2012).

Case Study Selection: Case studies were selected subjectively. This could be viewed as both a strength and weakness. Ultimately, this was both a strength and weakness. It was a strength as it limited the complication of the review, but also acted as a weakness due to geographical

differences, population size, and funding which was provided to cities for waterfront planning. It is important to consider that waterfront planning is diverse between cities, provinces, and countries.

5.0 CONCLUSIONS AND FUTURE RESEARCH NEEDS

5.1 Conclusion

Based on the findings from this analysis, it is apparent that Sustainable Waterfront Planning is a highly diverse topic which is different depending on geographic location and city. While it is obvious that important concepts are concretely developed and repetitive within plans, waterfront planning is highly dynamic as seen from the past to present. This is seen through the transition of the waterfront from a solely maritime use which came to close at the end of the period of industrial growth in the early 20th century to an intense effort to redesign abandoned waterfronts (Kostopoulou, 2013). Now, waterfront planning has transitioned to following 'urban regeneration' to improve quality of life for all and "bring about a lasting change in the economic, physical, social, and environmental condition of an area that has been subject to change" (Roberts & Sykes, 2008, p. 296). Particularly, David Crombie's *Royal Commission on the Future of the Toronto Waterfront* (1992) is a pivotal piece of literature regarding waterfront regeneration.

The research suggests that the framework developed was successful in helping understand the importance of specific themes within waterfront sustainability planning. The literature review strongly reflected the themes which were consistently recognized throughout the chosen case studies. The methods chosen efficiently and accurately displayed the commonalities and differences between many of the themes within planning documents.

Regarding the case studies specifically, it was determined that Kingston best met the criteria due to the number of coded references associated with the city. It can be predicted that this is because Sustainable Kingston has been developed in conjunction with Waterfront Kingston, using expertise from Waterfront Toronto and therefore focusing on many of the main Waterfront Sustainability Framework themes. This proves that planning documents, specifically in waterfront planning are continuing to progress in implementing sustainability by learning from successes and failures. Yet, these results do not discredit the success of Toronto or Barrie. Had a different set of criteria been applied either of these cities' waterfront planning might have emerged as stronger.

The framework developed did have some aspects which can be omitted based on limited appearance within the document (see Chapter 4.3.8) and some missing aspects such as safety, economic development, innovation and aesthetics, and connectivity (as noted in Chapter 5.2). It can be confidently concluded that due to the complicated evolution of waterfront sustainability planning and unique attributes to each city, a consistent framework cannot be applied evenly to all cities due to the competing differences in geographical location, population, and funding. Conducting research within this topic has proven that regeneration will continue to mold and evolve waterfront sustainability planning within cities and apply to the larger concept of urban planning and sustainability. Additionally, it is distinctly recognizable that sustainable waterfront planning can spark improvements and progress within waterfront areas, as well as within the entirety of a city.

5.2 Future Research

As waterfront plans continue to develop and monitor progress, research should be continued identify the positive aspects of implementations waterfront sustainability planning, both in Canada and internationally to facilitate forward thinking progress.

Throughout conducting the document analysis, numerous themes arose which were not included in my waterfront framework, both due to the scale of the project and the lack of these concepts being considered in the literature. However, upon reviewing the waterfront case studies it became apparent these concepts were highly significant and therefore should be examined in future research.

5.2.1 Safety

All case studies promoted safety as one of the supporting factors to improving access and encouraging use of the waterfront. The Kingston Waterfront Plan outlined major aspects of safety which were recognized similarly across all waterfront case studies;

- Promoting a safe experience along the waterfront by encouraging access and use
- Installation and use of strategic lighting with consideration for minimizing the impact of excessive levels of lighting; and
- Incorporating signage and wayfinding throughout the waterfront
- Safe boat launch entry and consideration regarding shoreline conditions (City of Kingston, 2016, pp. Ch. 2, p.9)

Safety will improve equal access for waterfront use, particularly for women and children, aging populations, and those with disabilities. Overall, greater safety contributes to greater sustainability of waterfronts overall and should be included in future research.

5.2.2 Economic Development

A major aspect which was not included in my waterfront sustainability framework was the concept of economic development and financial analysis. Understandably, the economic contribution of waterfronts to a city is a significant motivator for regenerating waterfront areas and attempting to achieve the triple bottom line. A successful waterfront plan should have the capability to provide economic improvement for a city. Tourism, manufacturing, and commercial aspects were prevalent throughout all plans including economically stimulating aspects such as:

- Develop waterfront activities for all seasons and users.
- Achieve high quality public spaces to attract high-quality private developments.
- Encouraged mix use of downtown and waterfront.

Each plan reinforced the need to continue future economic sustainability by bringing year-round activity and animation to the waterfront core (City of Barrie, 2012, p. 9; City of Kingston, 2019, p. 461; City of Toronto, 2019, pp. Ch.6, p.18-19). Additionally, all plans included estimates for capital budgeting purposes based on sites, programing, schematic design, cost of waterfront improvements and anticipated levels of investment (City of Barrie, 2013, pp. Ch. 7, p.3; City of Kingston, 2016, pp. 145-151; Waterfront Toronto, 2018, pp. 63-65).

5.2.3 Innovation and Aesthetics

Broad concepts of innovation and aesthetics were also included within most documents, often connected to aspects of economic development and sustainability (City of Kingston, 2019, p. 390; Barrie Planning and Services Department, 2014, p. 133; City of Toronto, 2019, pp. Ch.3, p.1). Innovation, for example, referred to the use of alternative or new planning practices or smart partnerships to attempt to improve an aspect of design or sustainability within the

waterfront. Specifically, this includes leading-edge materials, processes and technologies which will enhance and apply effective solutions to waterfront design (City of Toronto, 2015). Aspects of this were most prevalent with the Toronto Waterfront, which has consistently been a 'leader' in waterfront sustainability that is being integrated in Kingston and Barrie. Attention to 'aesthetic' was also important as it incorporated concepts such as 'clean' and 'green' as developed by Crombie (1992) to enhance the waterfront as a pleasant and 'trendy' environment.

5.2.4 Connectivity

Within all case studies, there was a constant focus on connectivity, as planners design to seek and enhance a sense of proximity by overcoming barriers (such as highways and railways) between the city and water's edge (Barrie Planning and Services Department, 2014, p. 115; City of Kingston, 2019, p. 48; City of Toronto, 2019, p. 14). This also includes connectivity between the waterfront and adjacent neighborhoods, which was implicitly relevant to the attribute of transportation within my waterfront sustainability framework. Urban connectivity is developed for transportation, communication, and energy distribution. The need for and maintenance of connectivity to provide these functions and services is an unquestioned priority in urban planning and management (Ahern, 2013, p. 1207). The overarching theme was that the waterfront should feel and function as part of the city fabric. This includes redesigning corridors, improving transportation, completing public pathways, and highlighting key heritage and cultural corridors. This would vary greatly depending on the case study due to difference in geographic location and population size.

5.2.5 Transparency

Transparency was a repeated concept within the Toronto and Kingston case studies (Corporation of the City of Kingston, 2010, p. 16; Waterfront Toronto, 2018, p. 30). It was noted in the Barrie

case study, but was inferred through “an extensive community consultation process” (City of Barrie, 2012, p. 5). This refers to maintaining monitoring of progress through publishing truthful information on the process, evaluating the current performance, and reporting the information to the public in an accessible manner. This should include tracking of positive and negative changes to result in continuous improvements of the plan (Corporation of the City of Kingston, 2010). Within all plans, even if not explicitly stated, this was a major aspect of maintaining communication with stakeholders, community, and public involvement. By maintaining transparency, improvements are consistent and can be applied to the broader waterfront sustainability community.

6.0 ACKNOWELDGEMENTS

Firstly, I would like to thank my thesis supervisor, Dr. Graham Whitelaw, for his guidance and feedback throughout this year. Similarly, my gratitude also goes to Kyla Tienhaara for acting as an examiner throughout this project.

I would also like to thank my family and friends for their support and encouragement throughout this study and my past four years at Queen’s University. Education, and specifically, independent projects such as these become much more important when given the opportunity to be able to share them with a support system and feel continually motivated to meet goals.

I dedicate my thesis to all students passionate about sustainability and the environment who are looking to apply their education to a greater cause.

Rebecca Clark

April 20th, 2020

7.0 REFERENCES

Adams, D. (1994). *Urban Planning and the Development Process.* New York: Routledge. Retrieved from https://books.google.ca/books?hl=en&lr=&id=9TyTBN4m5-kC&oi=fnd&pg=PR1&dq=urban+planning&ots=MqKXLdhs6e&sig=KdWnQONDR55eHE66kojqXarYeaE&redir_esc=y#v=onepage&q=urban%20planning&f=false

Ahern, J. (2013). Urban Landscape Sustainability and Resilience: The Promise and Challenges of Integrating Ecology with Urban Planning and Design. *Landscape Ecology, 28*, 1203-1212. doi:10.1007/s10980-012-9799-z

Ali, K., Shafaghat, A., Mohamad, S., Abdullahi, M., Ahmad, H., Derus, N., & Khorami, M. (2018). A Sustainable Historic Waterfront Revitalization Decision Support Tool for Attracting Tourists. *Sustainability, 10*(2), 215. Retrieved from https://www.mdpi.com/2071-1050/10/2/215/htm

Attia, S., & Ibrahim, A. (2018). Accessible and Inclusive Public Space: The Regeneration of Waterfront in Informal Areas. *Urban Research and Practice, 11*(4), 314-337. Retrieved from https://www.tandfonline.com/doi/full/10.1080/17535069.2017.1340509

Barrie Planning and Services Department. (2014). *The City of Barrie Official Plan.* Barrie: City of Barrie. Retrieved from https://www.barrie.ca/City%20Hall/Planning-and-Development/Documents/Official-Plan-text.pdf

Basiago, A. (1999). Economic, social, and environmental sustainability in development theory and urban planning practice. *The Environmentalist, 19*, 145-161. Retrieved from https://link.springer.com/content/pdf/10.1023/A:1006697118620.pdf

Bassett, K., Griffths, R., & Smith, I. (2002). Testing Governance: Partnerships, Planning and Conflict in Waterfront Regeneration. *Urban Studies, 39*(10), 1757-1775. Retrieved from https://journals-sagepub-com.proxy.queensu.ca/doi/pdf/10.1080/0042098022000002948

Berg, B. (2001). *Qualitative Research Methods for The Social Sciences.* Needham Heights, MA: A Pearson Education Company. Retrieved from https://epdf.pub/qualitative-research-methods-for-the-social-sciences-4th-edition.html

Bowen, G. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal, 9*(2), 27-40. Retrieved from https://pdfs.semanticscholar.org/0e25/32c31c992ac0930998561932f198b467572d.pdf

Brunce, H. (2009). Developing Sustainability: Sustainability Policy and Gentrification on Toronto's Waterfront. *The International Journal of Justice and Sustainability, 14*(7). Retrieved from https://www.tandfonline.com/doi/full/10.1080/13549830903097740

Bruttomesso, R. (2004). *Complexity on the Urban Waterfront.* London: Taylor and Francis. Retrieved from https://www.taylorfrancis.com/books/e/9780203166895

City of Barrie. (2012). *2012 Waterfront Update : Technical Memorandum.* Barrie: City of Barrie. Retrieved from https://www.barrie.ca/Living/ParksTrails/Waterfront/Documents/TM-1%20Background%20Review.pdf

City of Barrie. (2013). *Barrie Waterfront and Marina Strategic Plan.* Barrie: The City of Barrie. Retrieved from https://www.barrie.ca/Living/ParksTrails/Waterfront/Documents/Waterfront-Marina%20Strategic%20Plan%20-%20Final%20Report%20-%20Cover_Table%20of%20Contents.pdf

City of Kingston. (2001). *The Downtown Action Plan: An Infrastructure Renewal and Public Open Space Plan.* Kingston: City of Kingston. Retrieved from https://www.cityofkingston.ca/documents/10180/85876/Part%206

City of Kingston. (2016). *Kingston's Waterfront Masterplan.* Kingston: City of Kingston. Retrieved from https://www.cityofkingston.ca/documents/10180/13926536/Project_WFMPFinal_ExecSummary.pdf/5941b1a7-9620-4941-9159-cc8a7455ba87

City of Kingston. (2019). *Kingston Offical Plan.* Kingston: City of Kingston. Retrieved from https://www.cityofkingston.ca/documents/10180/541790/Official+Plan/17793cad-90db-4651-8092-16c587600001

City of Toronto. (2015). *Waterfront Strategic Review.* Toronto: Toronto City Council. Retrieved from http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX7.6

City of Toronto. (2019). *Official Plan.* Toronto: City of Toronto. Retrieved from https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/official-plan/chapters-1-5/

Colantionio, A., & Dixon, T. (2011). *Urban Regeneration and Social Sustainability: Best Practice from European Cities.* Chichester: Wiley-Blackwell. Retrieved from https://books.google.ca/books?hl=en&lr=&id=IbVrXCBy_j8C&oi=fnd&pg=PT7&dq=urban+regeneration&ots=x_AYxRkGpY&sig=c-LtUkN-Z9FmrJJ4-Ji93uiBipE&redir_esc=y#v=onepage&q=urban%20regeneration&f=false

Corporation of the City of Kingston. (2010). *Sustainable Kingston Plan.* Kingston: Sustainable Kingston. Retrieved from https://static1.squarespace.com/static/58934b2459cc6801da2b638e/t/593edb94c534a5c8d10adddf/1497291676591/sk-plan-final-f-112310.pdf

Crombie, D. (1992). *Toronto's Waterfront and Sustainable City: Final Report.* Ottawa: Royal Commission on the Future of the Toronto Waterfront.

Desfor, G., Laidley, J., Stevens, Q., & Schubert, D. (Eds.). (2011). *Transforming Urban Waterfronts Fixity and Flow.* New York: Routledge. Retrieved from https://books.google.ca/books?hl=en&lr=&id=DpQtCgAAQBAJ&oi=fnd&pg=PP1&dq=

historical+waterfronts&ots=EFsggNZAOP&sig=fJ29kERsncRoAxyLBu7VcTko2iA&redir_esc=y#v=onepage&q=historical%20waterfronts&f=false

Dill, P., & Bedford, P. (2001). *Central Waterfront Part II Plan.* City: City of Toronto. Retrieved from https://www.toronto.ca/wp-content/uploads/2017/11/99b7-waterfrontplansec1.pdf

Donofrio, J. (2007). Preservation as a Tool for Waterfront Revitalization: Design, Management, and Financing Solutions from Vancouver, Boston, and London. *Theses: Historic Preservation*, 72. Retrieved from https://repository.upenn.edu/cgi/viewcontent.cgi?article=1073&context=hp_theses

Dreyfuss, D., Mifsud, M., & Malderen, T. (2013). The Architectural Practice of Regeneration. *Sustainability, 5*(9), 3895-3905. Retrieved from https://www.mdpi.com/2071-1050/5/9/3895/htm

Eagles, P. (1984). *The Planning and Management of Environmentally Sensitive Areas.* Harlow: Longman. Retrieved from https://www.cabdirect.org/cabdirect/abstract/19851820145

European Commission. (2015). The Urban Development Network. *Regional and Urban Policy* (pp. 1-27). Brussels: The European Commission. Retrieved from https://ec.europa.eu/regional_policy/sources/conferences/udn2015/design_strategies_tosics.pdf

Evans, R. (2012). Design of the Environmental Impact Statement. *2012 IEEE International Professional Communication Conference* (pp. 1-14). Orlando: IEEE. Retrieved from http://ieeexplore.ieee.org.proxy.queensu.ca/stamp/stamp.jsp?tp=&arnumber=6408612&isnumber=6408590

Frey, O. (2009). Creativity of Places as a Resource for Cultural Tourism. In G. Maciocco, & S. Silvia (Eds.), *Enhancing the City: New Perspectives for Tourism and Leisure* (pp. 135-153). Dordrecht: Springer Netherlands. Retrieved from https://link-springer-com.proxy.queensu.ca/chapter/10.1007/978-90-481-2419-0_7

Galland, D. &. (2012). The Roles of Planning in Waterfront Redevelopment: From Plan-led and Market-driven Styles to Hybrid Planning? *Planning Practice & Research, 27*(2), 203-205. Retrieved from https://rsa.tandfonline.com/doi/full/10.1080/02697459.2012.661669?casa_token=llliIib5zasAAAAA%3A0ApEUxLG43rujHDTozMPXcF_zDK3BZNsl71I_nP1MDr0EuPpoEm-B92myWpQU111XJTRjmw_kPmn#.Xn4taohKg2w

Gibson, R. (2006). Sustainability assessment: basic components of a practical approach. *Impact Assessment and Project Appraisal*, *24*(3), 170-182. Retrieved from https://www.tandfonline.com/doi/abs/10.3152/147154606781765147#aHR0cHM6Ly93d3cudGFuZGZvbmxpbmUuY29tL2RvaS9wZGYvMTAuMzE1Mi8xNDcxNTQ2MDY3ODE3NjUxNDc/bmVlZEFjY2Vzcz10cnVlQEBAMA==

Gibson, R., Alexander, D., & Tomalty, R. (1997). Putting Cities in Their Place: Ecosystem Based Planning for Canadian Urban Regions. In M. (. Roseland, *EcoCity Dimensions:*

Healthy communities, healthy planet (pp. 25-39). Gabriola Island, BC: New Society. Retrieved from https://viurrspace.ca/bitstream/handle/10613/2758/Alexander.EcoCity.pdf?sequence=1

Girard, L., Kourtit, K., & Nijkamp, P. (2014). Waterfront Areas as Hotspots of Sustainable and Creative Development of Cities. *Sustainability, 6*(7), 4580-4586. Retrieved from https://www.mdpi.com/2071-1050/6/7/4580

Glotzbatch, S., & Baumgartner, S. (2012). The Relationship Between Intergenerational and Intragenerational Ecological Justice. *Environmental Values, 21*, 331-335. Retrieved from https://www-ingentaconnect-com.proxy.queensu.ca/content/whp/ev/2012/00000021/00000003/art00007#

Government of Ontario. (2017, March 14). *Preparing Environmental Assessments*. Retrieved from Government of Ontario: https://www.ontario.ca/page/preparing-environmental-assessments#section-4

Hadayeghi, A., Shalaby, A., & Persaud, B. (2007). Safety Prediction Models: Proactive Tool for Safety Evaluation in Urban Transportation Planning Applications. *Journal of the Transporation Research Board, 2019*(1), 225-236. Retrieved from https://journals.sagepub.com/doi/abs/10.3141/2019-27?casa_token=qpdk7JOsi4MAAAAA:2EBuPQ9lQsMA_Cb-X1y1FlUnR0HtxcgGfH4B8Ey_Kb4MMi0QHv7SiI0oNsYziGOLSf-n4rN8XZ65

Hersh, B. (2012). *The Complexity of Urban Waterfront Redevelopment.* New York: NAIOP Research Foundation. Retrieved from https://www.naiop.org/-/media/Research/Research/Research-Reports/The-Complexity-of-Urban-Waterfront-Redevelopment/waterfront-redevelopment.ashx

Herzele, A., & Wiedemann, T. (2003). A monitoring tool for the provision of accessible and attractive urban green spaces. *Landscape and Urban Planning, 63*(2), 109-126. Retrieved from https://www.sciencedirect.com/science/article/pii/S0169204602001925

Hoyle. (2000). Global and Local Change on the Port - City Waterfront. *Geographical Review, 90*(3), 395-417. Retrieved from https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1931-0846.2000.tb00344.x

Ismail, W., & Said, I. (2015). Integrating the Community in Urban Design and Planning of Public Spaces: A Review in Malaysian Cities. *Procedia - Social and Behavioural Sciences, 168*(9), 357-364. Retrieved from https://www.sciencedirect.com/science/article/pii/S1877042814056997

Jacobson, S., McDuff, M., & Monroe, M. (2015). Conservation Education and Outreach Techniques. Oxford: Oxford University Press. Retrieved from https://books.google.ca/books?id=9T0VDAAAQBAJ&pg=PA184&lpg=PA184&dq=quincy+conservation+education&source=bl&ots=_DL5RXvckC&sig=ACfU3U0drRNppEoJ-2q0Eowxs1JcOU-

IEQ&hl=en&sa=X&ved=2ahUKEwj9nIfknO3mAhUBPa0KHUm3CigQ6AEwAXoECAsQAQ#v=onepage&q=quincy%20conservat

Jelovac, S. (2013). Towards Sustainable Waterfront Transformation: Through the Mediterranean to Montenegro. *Sustainable Development and Planning, 173*(5), 1743-3541. Retrieved from https://www.witpress.com/Secure/elibrary/papers/SDP13/SDP13004FU1.pdf

Jones, A. (1998). Issues in Waterfront Regeneration: A More Sobering Thoughts - A UK Perspective. *Planning Practice and Research, 13*(4), 433-442. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/02697459815987

Keyvanar, A., Shafaghat, A., Mohamad, S., Abdullahi, M., Ahmad, H., Derus, N., & Kohrami, M. (2018). A Sustainable Historic Waterfront Revitalization Decision Support Tool for Attracting Tourists. *Sustainability, 10*, 2. Retrieved from https://www.mdpi.com/2071-1050/10/2/215/htm

Kostopoulou, S. (2013). On the Revitalized Waterfront: Creative Milieu for Creative Tourism. *Sustainability, 5*(11), 4578-4593. Retrieved from https://www.mdpi.com/2071-1050/5/11/4578

Kriebel, D., Tickner, J., Epstein, P., Lemons, J., Levins, R., Loechler, E., . . . Stoto, M. (2001). The Precautionary Principle in Environmental Science. *Environmental Health Perspectives*, 1. Retrieved from https://ehp.niehs.nih.gov/doi/abs/10.1289/ehp.01109871

Krunic, N., Maksin, M., Milijic, S. O., & Durdevic, J. (2014). Population Dynamics and Land Cover Changes of Urban Areas. *Spatium, 31*, 22-29. Retrieved from https://www.researchgate.net/publication/274270117_Population_dynamics_and_land_cover_changes_of_urban_areas

Laidley, J. (2007). The Ecosystem Approach and the Global Imperative on Toronto's Central Waterfront. *Cities, 24*(4), 259-272. Retrieved from https://www.sciencedirect.com/science/article/pii/S0264275106001053

Landry, C. (2008). *The Creative City A Toolkit for Innovators.* London: Comedia Earthscan. Retrieved from https://books.google.ca/books?id=1ypae-qwaX4C&pg=PA133&lpg=PA133&dq=soft+infrastructure+refers+to+a+system+of+associative+structures+and+social+networks,+connections,+and+human+interactions+that+encourage+the+flow+of+ideas+between+individuals+and+institut

Lastman, M. (1999). *Our Toronto Waterfront! Wave of the Future.* Toronto: City of Toronto. Retrieved from https://www.toronto.ca/wp-content/uploads/2017/11/9958-waterfront_pro.pdf

Lee, B., Regier, H., & Rapport, D. (1982). Ten Ecosystem Approaches to the Planning and Management of the Great Lakes. *Journal of Great Lakes Research, 8*(3), 505-519. Retrieved from https://www-sciencedirect-com.proxy.queensu.ca/science/article/pii/S0380133082719896?via%3Dihub

Lehrer, U., & Laidley, J. (2008). Old Mega Projects Newly Packaged? Waterfront Redevelopment in Toronto. *International Journal of Urban and Regional Research, 32*(4), 786-803. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-2427.2008.00830.x

Levy, J. (2017). *Contemporary Urban Planning.* New York: Routledge. Retrieved from https://books.google.ca/books?hl=en&lr=&id=ezMlDwAAQBAJ&oi=fnd&pg=PP1&dq=urban+planning&ots=yiLIUrY-Cc&sig=UUYP8WHf014MZl22vwhe3lZvlOo&redir_esc=y#v=onepage&q=urban%20planning&f=false

Ling, C., Hanna, K., & Dale, A. (2009). A Template for Integrated Community Planning. *Environmental Management, 44*(2), 228-242. Retrieved from https://link.springer.com/article/10.1007/s00267-009-9315-7

Marichela, S. (2013). Urban History and Cultural Resources in Urban Regeneration: A Case of Creative Waterfront Renewal. *Planning Perspectives, 28*(4), 595-613. Retrieved from http://web.b.ebscohost.com.proxy.queensu.ca/ehost/detail/detail?vid=0&sid=b2978f57-1d8d-4756-94af-09e1905b28a9%40pdc-v-sessmgr04&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=92982220&db=a9h

McCarthy, J. (2004). Tourism-related waterfront development in historic cities: Malta's Cottonera Project. *International Planning, 9*(1), 43-64. Retrieved from https://www.tandfonline.com/action/showCitFormats?doi=10.1080%2F1356347042000234970

Niemann, B., & Werner, T. (2016). Strategies for the Sustainable Urban Waterfront. *WIT Transactions on Ecology and The Environment, 204*, 1743-3541. Retrieved from https://www.witpress.com/Secure/elibrary/papers/SC16/SC16037FU1.pdf

O'Faircheallaigh, C. (2010). Public participation and environmental impact assessment: Purposes, implications, and lessons for public policy making. *Environmental Impact Assessment Review, 30*(1), 19-27. Retrieved from https://www.sciencedirect.com/science/article/pii/S0195925509000845

Pearce, B., & Stubbs, M. (2000). The Role of Mediation in the Settlement of Planning Disputes at Appeal: The Debate of Research Agenda. *Environment and Planning A: Economy and Space, 32*(8), 1335-1358. Retrieved from https://journals.sagepub.com/doi/abs/10.1068/a3289

Queiros, A., Faria, D., & Almeida, F. (2017). Strengths and Limitations of Qualitative and Quantitative Research Methods. *European Journal of Education Studies, 3*(9). Retrieved from https://www.researchgate.net/publication/319852576_Strengths_and_Limitations_of_Qualitative_and_Quantitative_Research_Methods

Ravetz, J. (2013). New Futures for Older Ports: Synergistic Development in a Global Urban System. *Cities and Waterfront Infrastructure, 5*(12), 5100-5118. Retrieved from https://www.mdpi.com/2071-1050/5/12/5100

Richardson, G., & Otero, J. (2012). *Land Use Planning Tools for Local Adaptation to Climate Change.* Ottawa: Government of Canada. Retrieved from https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/files/landuse-e.pdf

Roberts, P., & Sykes, H. (2008). *Urban Regeneration: A Handbook.* Wiltshire, Great Britain: Sage Publications. Retrieved from https://books.google.ca/books?hl=en&lr=&id=oR70O6MayFAC&oi=fnd&pg=PP1&dq=urban+regeneration&ots=8VEQdb8_o_&sig=kOEnpvVG3sHsnPTXsC02eQvzsH0&redir_esc=y#v=onepage&q=urban%20regeneration&f=false

Rosen, M. (2009). Sustainability: A Crucial Quest for Humanity - Welcome to a New Open Access Jounral for a Growing Multidisciplinary Community. *Sustainability, 1*(1), 1-4. Retrieved from https://www.mdpi.com/2071-1050/1/1/1/htm

Sairinen, R., & Kumpulainen, S. (2006). Assessing social impacts in urban waterfront regeneration. *Environmental Impact Assessment Review, 26*(1), 120-135. Retrieved from https://www.sciencedirect.com/science/article/pii/S0195925505000764

Sepe, M. (2013). Urban history and cultural resources in urban regeneration: a case of creative waterfront renewal. *Planning Perspectives, 28*(4), 595-613. Retrieved from https://www.tandfonline.com/doi/full/10.1080/02665433.2013.774539?casa_token=pJxFgUZK0v0AAAAA%3AiIQhhfk22lslA3je32HJPzYRzNfz7ASgHidhBkl2IT_tcE9wRwvRISpice-8xpeOSKu_qT0AS2-qng

Shepherd, A., & Ortolano, L. (1996). Strategic Environmental Assessment for Sustainable Urban Development. *Environmental Impact Assessment Review, 16*(4-6), 321-335. Retrieved from https://www-sciencedirect-com.proxy.queensu.ca/science/article/pii/S0195925596000716?via%3Dihub

Smith, H., & Ferrari, M. (2012). *Waterfront Regeneration Experiences in City Building.* New York: Routledge. Retrieved from https://books.google.ca/books?hl=en&lr=&id=t5DHBQAAQBAJ&oi=fnd&pg=PT12&dq=implementation+of+monitoring+in+waterfront+regeneration&ots=Tocv2bd7rR&sig=Z93QZHtUdf64kEIabZIUkYHuQ2w&redir_esc=y#v=onepage&q=monitor&f=false

Stuart, J., Collins, P., Alger, M., & Whitelaw, G. (2016). Embracing sustainability: the incorporation of sustainability principles in municipal planning and policy in four mid-sized municipalities in Ontario, Canada. *The International Journal of Justice and Sustainability, 21*(2), 219-240. Retrieved from https://www.tandfonline.com/doi/full/10.1080/13549839.2014.936844

Thai, K., Rahm, D., & Coggburn, J. (2007). *Sustainable Waterfront Development in the Great Lakes Basin.* Retrieved from shorturl.at/oRU34

The City of Kingston. (2020). *Waterfront Working Group*. Retrieved March 20, 2020, from The City of Kingston: https://www.cityofkingston.ca/city-hall/committees-boards/waterfront-working-group

The University of Auckland. (2019, April). *Thematic Analysis A Reflexive Approach*. Retrieved February 10, 2020, from The University of Auckland New Zealand: https://www.psych.auckland.ac.nz/en/about/thematic-analysis.html

Timur, U. (2013). Urban Waterfront Regenerations. In M. Ozyavuz, *Advances in Landscape Architecture.* IntechOpen. Retrieved from https://www.intechopen.com/books/advances-in-landscape-architecture/urban-waterfront-regenerations

Tomalty, R. (2013). *Sustainable Cities The Role for Philanthropy in Promoting Urban Sustainability.* Toronto: Canadian Environmental Grantmakers' Network. Retrieved from https://www-deslibris-ca.proxy.queensu.ca/ID/238237

United Nations. (1987). *Report of the World Commission on Environment and Development Our Common Future.* United Nations. Retrieved from https://www.are.admin.ch/are/en/home/sustainable-development/international-cooperation/2030agenda/un-_-milestones-in-sustainable-development/1987--brundtland-report.html

United Nations Department of Economic and Social Affairs . (2018, May 16). *68% of the World Population Projected to Live in Urban Areas by 2050, Says UN*. Retrieved from United Nations Department of Economic and Social Affairs : https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html

Vigar, G. (2009). Toward Integrated Spatial Planning? *European Planning Studies, 17*(11), 1571-1590. Retrieved from https://www.tandfonline.com/doi/pdf/10.1080/09654310903226499?needAccess=true

Walker, H. (2013). *The Handbook of Design for Sustainability.* London: Bloomsbury Academic. Retrieved from https://books.google.ca/books?id=sahLAQAAQBAJ&pg=PA87&lpg=PA87&dq=Instead+of+viewing+the+city+as+a+negative+environmental+space,+it+can+be+viewed+as+a+catalyst+for+positive+and+sustainable+change.&source=bl&ots=Jh6gSu4kwO&sig=ACfU3U3edwlgzdk2rWPeu9DtNskSU

Waterfront Toronto. (2001). *Who We Are*. Retrieved March 17, 2020, from Waterfront Toronto: https://waterfrontoronto.ca/nbe/portal/waterfront/Home/waterfronthome/about-us/who-we-are/government+partners

Waterfront Toronto. (2018). *Waterfront Toronto Five Year Strategic Plan.* Toronto: Waterfront Toronto. Retrieved from https://www.waterfrontoronto.ca/nbe/wcm/connect/waterfront/6ad7cede-0238-4d67-

9284-e243793beea3/Waterfront+Toronto+Five-Year+Strategic+Plan_NEW.pdf?MOD=AJPERES

Waterfront Toronto. (n.d.). *Our Vision*. Retrieved March 20, 2020, from WATERFRONToronto: https://www.waterfrontoronto.ca/nbe/portal/waterfront/Home

Wise, N. (2016). Outlining triple bottom line contexts in urban tourism regeneration. *Cities, 53*, 30-34. Retrieved from https://pdf.sciencedirectassets.com/271784/1-s2.0-S0264275115X00114/1-s2.0-S0264275116300038/main.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjELD%2F%2F%2F%2F%2F%2F%2F%2F%2F%2FwEaCXVzLWVhc3QtMSJIMEYCIQC3nklIIIsLxQ9bIQzWoQNAZ6guzDTMTwCN3HtJlFBzvAIhAI9fEy6RjkOT

Wood, D. (1965). Renewing Urban Waterfronts. *Land Economics, 41*(2), 141-149. Retrieved from https://www-jstor-org.proxy.queensu.ca/stable/pdf/3144268.pdf?refreqid=excelsior%3A27dc5cac85565ed0b7ad58b059b29d4c

World Population Review. (2020). *Canada Population 2020*. Retrieved March 10, 2020, from World Population Review: https://worldpopulationreview.com/countries/canada-population/

Wrenn, D. (1984). Urban Waterfront Development. *St. Mary's Law Journal*, 555-574. Retrieved from https://heinonline.org/HOL/Page?handle=hein.journals/stmlj15&div=33&g_sent=1&casa_token=&collection=journals

Yin, R. (2011). *Qualitative Research from Start to Finish.* New York: The Guildford Press. Retrieved from http://in.bgu.ac.il/humsos/politics/Documents/Ethics/Yin%20Qualitative%20Research%20from%20Start%20to%20finish.pdf

Yin, R. (2012). *Applications of Case Study Research* (3 ed.). Thousand Oaks: SAGE Publications. Retrieved from https://books.google.ca/books?hl=en&lr=&id=FgSV0Y2FleYC&oi=fnd&pg=PP1&dq=why+case+study+research+is+important&ots=42e2NruiNk&sig=2ae9aR6e_EZmq_pkDnHf8dWQUr8&redir_esc=y#v=onepage&q=why%20case%20study%20research%20is%20important&f=false