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Goals of Environmental Equity in Urban Climate Action Plans: Trends of Environmental Justice in Lower-Income Neighbourhoods within Toronto's TransformTO Net Zero Strategies

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"Change Happens at the Speed of Trust"- Stephen Covey (2016)

Summary

Climate change is a growing global concern. Cities will be most vulnerable to its effects, with risks to climate change unevenly faced. Vulnerable communities will experience compounded marginalities and will suffer disproportionately, facing greater environmental impact and loss of resources in comparison to others. Climate change risks the further divide of our society, amplifying the extent of injustice felt if not recognised in climate action plans.

The purpose of this research was to identify possible trends between Moss Park and Regent Park, two lower income neighbourhoods in Toronto, Canada, to recognize patterns of environmental justice felt throughout the development of TransformTO Net Zero strategies. Findings aimed to understand the perception of TransformTO at a low-income neighbourhood scale and to identify how this experience may be similar on account of this shared identity.

A comparative case study analysis between Moss Park and Regent Park was completed through focus groups, interviews, and desktop research. One focus group and 6 interviews were conducted per neighbourhood. Responses were compared to TransformTO reports, policy development (from 2015 to present) and its evolving focus on equity. The comparison between neighbourhoods deepened the understanding of how the processes of TransformTO have been applied in context. Research was triangulated by including and comparing the responses from community members, experts, and policies through the different data collection methods.

Trends of environmental justice on account of income, gender, culture, and immigrant status were found between Moss Park and Regent Park. However, these inequities are presented differently in context, resulting in differing perceptions of TransformTO. Regent Park has a distinguished sense of community, where Moss Park does not. A built community fosters resident-led opportunities of engagement and participation, empowering citizens to demand for justice. Economic status impacted the injustice felt in both neighbourhoods due to the affordability of novel technologies. Most respondents are renters, which restricts their autonomy to make sustainable changes to their homes. Power in decision-making still rests in the hands of political leaders and key decisionmakers.

This research concludes there is a lack of context specific approaches to TransformTO. Generalized approaches to environmental justice risks the further marginalization of already underserved communities. Increased education and engagement will empower communities to partake in climate action. Knowledge sharing between the municipality and its constituents will be imperative for a holistic approach to TransformTO. Uniting adaptation and mitigation

efforts, intersectionally and intrasectionally, will strengthen sustainable development of the city.

Keywords

Equity, Sustainable Transitions, Environmental Justice, Community Development

Acknowledgements

Growing up in Toronto, I have always been fascinated by how vastly different areas of my city were. My daily commute to and from work for the past two years crossed through three different neighbourhoods. I could see and feel the transition between spaces as I biked along. It was incredible that neighbourhoods bordering one another were so diverse yet shared the identity of being a Toronto Central neighbourhood. This inspired my research, to understand the complexity of the urban fabric that makes up a city such as Toronto, and how to uphold this multifarious identity through the sustainable development of the city.

I would like to thank my supervisor, Professor Laura Quadros Aniche, for all the support and for challenging me throughout this process to put my best work forward. You helped ignite my excitement towards research and pushed me beyond what I thought I was capable of. Your dedication to our thesis circle was unrivalled, creating an inclusive environment where we could share and learn from each other. To Jacob and Sam, thank you for your support through our thesis circle meetings, for your feedback and enthusiasm you had to my research topic. I enjoyed sharing my research journey with you both.

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Abbreviations

IHS	Institute for Housing and Urban Development Studies
GHG	Greenhouse Gas
EJ	Environmental Justice
MP	Moss Park
RP	Regent Park
TCHC	Toronto Community Housing Corporation
IPCC	Intergovernmental Panel on Climate Change
NZ	Net Zero
GN	Global North
GS	Global South
CC	Climate Change
CE	Community Engagement
PP	Public Participation
NIA	Neighbourhood Improvement Association
NCAG	Neighbourhood Climate Action Grants
RPRP	Regent Park Revitalization Project

1: Introduction

1.1 Background and Problem Statement

Climate change (CC) is a global concern, with cities most vulnerable to its impacts (Rosenzweig et al. 2011; Graaf-van Dinther, 2021). This concern is addressing the changes in our climate over time, influenced by human activity (IPCC, 2007). There has been an increase in episodes of extreme weather events that put pressure on the threshold of our environment. These extremes are demonstrated in both the frequency and the magnitude of these events (Seneviratne & Zhang, 2021), resulting in a collective increase of injuries, illnesses and deaths due to climate.

The world is in a climate emergency, approaching tipping points with irreversible damages to the planet if warming exceeds 2 degrees Celsius (Lenton et al., 2019). The Intergovernmental Panel on Climate Change (IPCC) has declared that the observed warming is on account of increased greenhouse gas (GHG) emissions, with the largest contributor being from anthropogenic emissions (IPCC, 1995; Kerr 2001). CC is putting mankind at greater risk, resulting in consequences to lives, livelihoods, health, and wellbeing of the global population (IPCC, 2020).

Our global population is projected to rise to approximately 9.7 billion people by 2050 (United Nations, 2022). More than 66% of people will live in urban areas (UN Habitat, 2011), with urbanization accelerating faster than at any other time in human history (Scott & Storper, 2014). Population growth and migration have been key drivers in the shift to urban living (Koomen et al., 2023). The urban environment is responsible for 80% of the global energy consumption (Harris, Weinzettel, Bigano, & Källmén, 2020) and over 70% of GHG, becoming the most responsible for decarbonizing the global economy (Wei, Wu & Chen, 2021). Urban areas have become carbon emission hot spots. The socio-economic strength and related consumption of cities are critical in the discourse of addressing sustainability and CC (C40 Cities, 2018; Harris et. al, 2020).

Social, economic, and historical factors, operating at multiple scales, determine the extent of human vulnerability (Thomas et al., 2019). Vulnerability occurs because of marginalization or poverty of certain social groups, and through processes that perpetuate marginalization and poverty (Anguelovski et al., 2016; Atteridge & Remling, 2018; Warner & Kuzdas, 2016; Thomas et al., 2019). Communities most vulnerable experience compounding

marginalities and suffer disproportionately from the effects of poor services and living conditions (Castán Broto and Neves Alves, 2018; Graaf-van Dinther, 2021), facing greater environmental impacts and loss of resources relative to others. Therefore, prioritizing the needs of the most vulnerable is essential to climate action (Roy et. al 2016; Graaf-van Dinther, 2021). The risks to CC are unevenly distributed, creating new inequities and deepening existing ones (Ebi & Hess, 2020). The growing pressures of CC further divides our society, intensifying the marginalization of certain communities. Climate resilience policies and practices lack a normative focus on the needs of the most vulnerable people (Bartlett and Satterthwaite, 2016; Graaf-van Dinther, 2021). Climate equity is a growing concern, now considered alongside factors of inclusion and justice by decisionmakers to help link resource, capacity, and awareness discrepancies within cities (Chu & Cannon, 2021). Reframing CC to a phenomenon that encompasses social, ethical, and political concern will connect issues of inequality and human rights violations that reinforce marginalization and vulnerability of certain groups (Graaf-van Dinther, 2021).

The Net Zero (NZ) model was taken up through the IPCC and United Nations in the 2015 Paris Agreement to eliminate carbon emissions and to shift away from fossil fuel consumption. NZ strategies have since been adopted by numerous countries, cities, corporations, and public and private sectors (Allen et al., 2022). The rising global commitment to NZ goals is considered the "most significant and encouraging climate policy development" (UNEP, 2020, pg. XVII). Since 2020, over 126 countries have established and adopted NZ goals, with approximately 51% of global GHG emissions addressed (UNEP, 2020). Though a shared goal, challenges are contextually different between the Global North (GN) and Global South (GS), and within the urban and rural environment. Therefore, responses and approaches to NZ goals need to vary accordingly (UN Habitat, 2015).

1.2 Research Gap and Relevance

1.2.1 Research Gap

Research suggests that there are common trends of environmental inequity across distributional inequities (Greene, Robinson, & Millward, 2018) with correlation to race, ethnicity and poverty factors (Anguelovski, Connolly & Cole, 2022), path dependency and social memory (Wilson, 2014) and gaps of income amongst citizens (Hodgson, 2016). Environmental inequity has been addressed from a global perspective, concerning GN nations

having disproportionate access to sink capacity and natural resources in comparison to the GS, while being the most responsible contributors to CC (Givens, Huang, & Jorgenson, 2019). North America in conjunction with East Asia, accounted for approximately 40% of global GHG emissions in 2018 (Lamb et al., 2021).

Broad themes of environmental injustice have been applied to nation and city-wide scales, recognizing trends of inequity across minority population concentrations, major pollutant sources and socio-economic depravities (Vaz, Anthony, & McHenry, 2017). There lacks a neighbourhood-scale analysis which looks at specific neighbourhoods within the city context. CC impacts are experienced where people live, therefore climate adaptability should be context specific (Thomas et al., 2019). The presence of space, race, and environmental justice (EJ) are concurrent to specific geographical contexts (Gibson-Wood, 2013).

Environmental inequities must be personalised to the city of focus to effectively address these problems. However, the context-specific nature of approaches to environmental inequity challenges the ability to create a uniform approach to EJ (Rahmann & Jonas, 2011). Therefore, little research has been done on a particular city. City-scale research on inequity has been dispersed across the globe, with researchers focusing on different cities from one another.

1.2.2 Relevance of Study

For this research, I selected Toronto, Canada to investigate the specific approaches taken to address CC. Toronto is the largest city in Canada, leading in the world of finance, business, and entertainment, and is home to approximately 7.6% of the nation's population (Statistics Canada, 2023). As Canada's most urbanized setting, it is essential to highlight Toronto as a leading force for decarbonization strategies and climate action goals.

Toronto has a large population of immigrants from various countries, making it one of the most multicultural cities in the world (City of Toronto, 2023). Toronto, though known to be a culturally inclusive city compared to other North American cities, has displayed significant evidence of racial and ethnic inequalities related to sprawl, socio-economic exclusions and other market-oriented conditions (Cole, 2012). These inequities are often overlooked in Canada in comparison to the United States. America's mass media has overshadowed the systemic racism and marginalization in Canada (Stelkia, 2020). Toronto's current design has disproportionately positioned the built environment, often resulting in racialized spatial trends where communities are exacerbated by the impacts of CC (Hassen, 2021).

TransformTO is the City of Toronto's NZ Strategy that commits to respond to the climate emergency by focusing on community-wide target of NZ GHG emissions by 2040 (City of Toronto, 2021[2]). TransformTO is developed through an equitable lens, channelling all levels of government, labour market and user accountability to interlink social and technological advances in Toronto (City of Toronto, 2021[3]). There is a need to look at environmental inequity at a neighbourhood scale to investigate the complexity of lower income communities and their perception of TransformTO.

The neighbourhoods Moss Park (MP) and Regent Park (RP) are selected case studies as they are a part of Ward 13-Toronto Central, immersed within more affluent areas in the city. MP and RP are lower income neighbourhoods that are misrepresented when grouped within a larger demographic of the Ward, further city, they are a part of (Statistics Canada, City of Toronto, 2016).

1.3 Main Research Question and Sub-Questions

The main research question is: *To what extent are there patterns of environmental justice between two lower income neighbourhoods in relation to Toronto's TransformTO strategies?* To assist in answering the main question, the following sub-questions will be discussed to support the overall objective of this research:

1. How does economic status relate to the level of environmental justice one experiences?
2. How does the perception of environmental justice differ between the lower income population and the city's strategies to ensure equity?
3. How has environmental justice changed throughout time? Why has or has not environmental justice progressed with the introduction of TransformTO?
4. How do the three concepts of EJ, being public participation, community engagement and knowledge, awareness and understanding, attribute to sustainable transitions? Are they important to the success of TransformTO?

This study will emphasise the necessity of public support in climate policymaking (Perlaviciute & Squintani, 2020), with participation catered to cultural and social needs to reduce environmental inequity (Hampton, 1999). Studying two neighbourhoods in conjunction

with TransformTO will strengthen the academic debate by giving empirical evidence to this argument.

2: Literature Review, Conceptual Framework & Hypotheses

2.1 Environmental Justice

Environmental Justice (EJ) is the social movement that has emerged in response to the social problems of environmental inequity (Sze & London, 2008). EJ concerns the unequal dissemination of environmental costs, benefits, and paralleled outcomes of wellbeing to understand central and connecting drivers of injustice (Martin et al., 2020). Environmental inequity can be recognized through existing social inequalities, presented across social categories of race, wealth, gender, as well as location relative to place and time (Martin et al., 2020). Causes of these injustices are not amorphous, they are embedded in socio-historical patterns of power. The complexity and interconnectedness of these trends have consequently attributed to, and has resulted in, the uneven distribution of CC.

CC often magnifies and intersects existing patterns of injustice (Newell et al., 2021). There is no single action responsible for the doing or undoing of EJ. It is rooted in socio-economic and historic aspects that have shaped the extent of EJ faced today. EJ provides the framework to analyse power relations between different stakeholders in the social, environmental, and economic sectors (Teelucksingh, Poland, Buse, & Hasdell, 2016).

The radical EJ framework will be applied, dividing EJ into three subgroups: distributive justice, recognition, and procedural justice. Analysing processes of EJ will help to understand the reasons behind the distribution of environmental services, with possible trends of inequity recognized in historically marginalized and lower-income areas (Svarstad & Benjaminsen, 2020). The radical EJ framework applied through political ecology theories emphasizes the significance of social status and existing power relations in society. This can be achieved by recognizing how people perceive, evaluate, and understand the experienced environmental impacts and how they learn and respond to CC (Svarstad & Benjaminsen, 2020). A better understanding of the public's overall knowledge, awareness and understanding reveals how well residents are involved in the conversation and how effective these voices are to policymaking. Knowledge is an imperative tool to achieve EJ; if an individual does not understand the subject, their perspectives become irrelevant and will not be considered. Without knowledge, people lack the power and ability to participate. EJ was analysed through the subgroup of procedural justice, referring to the decision-making processes, specifically who gets to participate and when (Martin et al., 2020).

The three concepts of EJ examined are public participation, community engagement and knowledge, awareness and understanding of environmental injustice. Public support, encouraged by social connection through community development, is required for climate policymaking (Perlaviciute & Squintani, 2020). Empowering the community through EJ concepts enables effective decision-making in the sustainable development of cities (Yigitcanlar, Dur, & Dizdaroglu, 2015). These concepts were selected as they are measurable through focus groups and interviews, providing specific data and insight that can help address the extent of EJ experienced at a neighbourhood-scale and on a personal level (Davis et al., 2019).

2.1.1 Public Participation

Public participation (PP) is the processes controlled by responsible parties to intentionally involve its constituents in climate policy planning, development, and implementation. (Stern & Dietz, 2008; Perlaviciute & Squintani, 2020). Climate policies require public support to reach socially acceptable strategies to move forward with. PP is found most effective in early stages of project development, offering the public time to be effectively informed, to process and the ability to participate (Perlaviciute & Squintani, 2020). The meaning of *participation* is dependent on existing theories of economic structures, discourses and agency within the area of focus (Svarstad & Benjaminsen, 2020).

Participation applied in exploring different social, scientific, and technological advances provides useful insight for planning processes (Larson & Gunnarsson-Östling, 2009). Participation empowers citizens; autonomous communities can participate in CC conversations and climate action. PP has the potential to shift existing social hierarchies, giving recognition to communities that may otherwise be overlooked. Encouraging intersectional conversation and collaboration in policymaking processes (Svarstad & Benjaminsen, 2020) will serve to support environmental equity for marginalized communities (Hampton, 1999).

2.1.2 Community Engagement

Community Engagement (CE) describes an interaction between individuals "with social-level dimensions of efficacy, participation, and relationships" which is achieved through "engagement, trust" "confirmation and reassessment, community involvement and collaboration" (Taylor, Johnston, & Ryan, 2022, pg. 330). Engagement warrants participation.

Without effective CE, PP will not be realized as few people will be aware of the opportunities to get involved. CE must encompass factors of engagement, trust, confirmation and reassessment, community involvement and collaboration in the context of study.

2.1.2a Engagement

Engagement ensures a shared responsibility of climate adaptation and mitigation strategies. Collective action between government and community when approaching climate action will better prepare communities as well as build social capital that will benefit communities overall (Taylor, Johnston & Ryan, 2022). Engagement is evident through awareness campaigns, community-initiated action plans, events, and volunteer opportunities. Trends of engagement tend to approach the capabilities of communities in a homogenous way, which risks the generalization of specific groups. This has the potential for specific actors and structures to feel invisible, furthering the level of injustice felt by the residents (Svarstad & Benjaminsen, 2020).

2.1.2b Trust

Trust is an important influence on how the public gets information, who and where this information is coming from and how they will make decisions (Paton 2007, 2018; Taylor, Johnston & Ryan, 2022). There needs to be a level of trust in authorities, experts and decision-makers, as people turn to trusted sources in times of uncertainty to have the confidence in the climate action goals set forth. There needs to be trust within the community to ensure collective action to see change through. CE facilitates "collaborative action, shared capacity building and the development of strong relationship built on mutual trust and respect" (AIDR 2018, p. 2; Taylor, Johnston & Ryan, 2022, pg. 338). Without trust, it would be very difficult to have an engaged community willing to participate.

2.1.2c Confirmation and Reassessment

Confirmation and reassessment are used as tools to provide routine updates through evidence-based frameworks to inform their practice (Frandsen et al. 2012; Taylor, Johnston & Ryan, 2022), to maintain relationships, and to foster trust. Regular operations and activities deliver accessible information to the public, reassuring the community how projects are progressing.

2.1.2d Involvement and Collaboration

Collaboration emerges from CE as a relational process that enhances social outcomes through community decision-making (Johnston et al. 2018, pg. 173; Taylor, Johnston & Ryan, 2022). Collaboration emphasizes a shared responsibility to be taken to climate action measures. A holistic approach will ensure the intersectoral involvement across the area of study.

Previous studies suggest that the public prefers CE and PP in decisions on local-scale projects (Perlaviciute & Squintani, 2020), with limitations to involvement in larger developments. Macro-level decisions tend to be made prior to PP, restricting when and how the public is to participate. This challenges the efficacy of participation that is best utilized in early stages of the project (Perlaviciute & Squintani, 2020).

2.1.3 Knowledge, Awareness, and Understanding

Knowledge, awareness, and understanding is the knowing of CC. Knowledge is achieved through learning, which enables residents to be best prepared for CC and provides the understanding to mitigate is effects on societies. Therefore, the level of sustainable development seen is dependent on the degree of education (Al zyadat, 2013; Zahra, 2023). Education is a vital part of climate action as it ensures that there is environmental awareness. Education shapes future behaviour and promotes participation in climate action. To ensure the efficacy of sustainable developments, strategies must be localized as the effects of CC differ from place to place, therefore the education to generate knowledge, awareness and understanding must also be contextualized (Zahra, 2023). It is important to recognize knowledge diversity to better understand the cultural values, existing education systems, environmental organizations and learned policies within the urban environment, further the city of focus, to shape effective education strategies and awareness campaigns. Knowledge empowers an individual to partake in decision-making processes, but also potentially risks the replication of power inequalities that are still in existence (Martin et al., 2020).

2.2 Procedural Justice

Procedural justice "involves issues of decision-making and power", looking at "various power perspectives, involving historical processes behind environmental injustices related to colonialism, racism, and state power, leading to environmental injustices as they are played out

today" (Svarstad & Benjaminsen, 2020, pg. 6). This concept will be applied to investigate causal effects that define EJ, focusing on participation throughout time and how different social positions of power presently contribute to EJ in Toronto. Procedural justice will help to understand the influence of social power and power theories, specifically "to do with actor and structure-oriented power in decision-making processes" (Svarstad & Benjaminsen, 2020, pg. 7). Inequity considers underlying factors that are in result of the processes of injustice (Whitehead, L. Pearson, Lawrenson, & Atatoa-Carr, 2019). Social power can influence, limit, or promote public involvement in environmental policymaking. Understanding power relations in context will justify the extent of EJ that is experienced and why. The deliberate use of inequity over inequality will be used when referring to procedural justice. Equity is synonymous to justice, further fairness (Hampton, 1999). When something is unfair, or inequitable, it results in inequality (Soken-Huberty, 2022).

2.2.1 Process

Process refers to a systemic understanding of "intentional, long-term change in service systems" and how these changes emerge (Vink, Koskela-Huotari, Tronvoll, Edvardsson, & Wetter-Edman, 2021, pg. 168). The process of inequity is a multifarious concept. Aspects of time, power, and systemic change all influence equity, which results in the inequalities currently faced. Incorporating time in analysis emphasizes how long these relationships have been present, and how they have developed to present day. Moreover, processes are important to consider, as it recognizes that these societal gaps and imbalances have evolved overtime and will continue to do so without intervention.

2.2.2 Social Power

Social power concerns how fairly decisions are made and by whom (Martin et. al., 2015; Ruano-Charmorro, Gurney, & Cinner, 2022), with higher levels of status more likely to be considered legitimate forms of participation to produce socially accepted outcomes in decision-making processes (Perlaviciute & Squintani, 2020). Social power can take on many forms, whether it be political, economic, material or discursive (Svarstad & Benjaminsen, 2020), that is influenced and defined by an individual's gender, ethnicity, economic status in conjunction with spatial and historical contexts (Martin et al., 2020). Social power is not only important to recognize in others, but in oneself, to understand the privilege and influence one

has over another. Analysing power relations in conjunction with theories of EJ has the potential to emphasise the importance of equity in social change (Cook & Hegtvedt, 1983). For effective transformative environmental change, existing power structures should be redistributed to ensure justice is achieved. This will require the elimination of forms of discrimination based on cultural, social and economic divisions that can be seen across geographical space and across generations (Martin et al., 2020).

2.3 Sustainable Transitions

Urbanization involves long-term transformations that realign the urban society, urban cultures, its technologies, government, and institutional frameworks (Frantzeskaki, Castán Broto, Coenen, & Loorbach, 2017).

To address the persistent and increasing pressures of CC, systemic realignment is needed to create fundamental changes, known as urban sustainability transitions. These transitions are shaped by actors with the resources, skills, and social connectivity to enable transformative capacity.

With the goal of achieving EJ, there must be a focus on *just transitions* – the transformative approach to sustainability is prefaced on the needs to change societal constructs, arrangements and relationships between people, and between man and nature. It is imperative to recognize just transitions to identify the underlying causes to sustainability, which includes the analysis of the political economy, social structures and power dynamics. Addressing these underlying factors will thus require the redistribution of power. Transformations currently recognized are focused on the importance to change the structure of global capitalism, changing the scope of shared goals, progress and equitable treatment to all (Martin et al., 2020). There needs to be a greater emphasis put on the intersectional social dimensions, creating an inclusive governing system and to empower the community to ensure the efficacy of sustainable transitions (Graaf-van Dinther, 2021). A community can only be empowered if there is a community presence, this must be considered when implementing just transitions. There needs to be a careful balance between autonomy and control when altering existing power dynamics, as collective action cannot be effective without a degree of structure (Ostrom, 1990).

2.3.1 Socio-Technical Transitions

This study will focus on socio-technical transitions. This perspective of transitions applied will help to understand the change and innovation of infrastructure sectors, with a focus on the interrelatedness of institutions, actors, and technology (Frantzeskaki, Castán Broto, Coenen, & Loorbach, 2017). Socio-technical approaches identify institutionalized cultures, structures, and practices where transitional change happens, highlighting how path dependencies, such as routine, interests and regulations, are challenged by transformative social innovations (Loorbach, Frantzeskaki, & Avelino, 2017).

2.3.2 TransfromTO

TransformTO is an overarching strategy which comprises of targets made by various divisions within the municipality including the energy sector, infrastructure and transportation. This city-wide strategy is a great example of how Toronto can sustainably transition into a more resilient city to adapt and mitigate the pressures of CC. TransformTO exemplifies characteristics of socio-technical transitions, through introducing innovative ideas for technical advancement, such as introducing district energy plans, advancing wastewater energy programs and electrifying our transportation to achieve carbon neutrality (City of Toronto, 2021[3]).

The report *TransformTO: Critical Steps for NZ by 2040* (2021) outlined targets that includes different sectors to be accountable for these changes. There are established short-term goals to be achieved by 2025, and long-term goals to be achieved by 2040 and beyond. The three short-term goals selected for this study include; 1. "For 75 per cent of school/work trips under 5 km are walked, biked, or by transit, by 2030", 2. "100 per cent of new buildings are designed and built to be near zero greenhouse gas emissions, by 2030" and "Greenhouse gas emissions from existing buildings are cut in half, from 2008 levels, by 2030" and 3. "Identify pathways to more sustainable consumption in City of Toronto operations and in Toronto's economy" all while ensuring "equitable implementation and ongoing improvement of engagement and reporting" (City of Toronto, 2021[3], pg. 4-6).

2.4 Conceptual framework

The following conceptual framework depicts the investigation of the relationship between EJ (dependent variable) and sustainable transitions (independent variable). The extent of EJ will be dependent on how accessible and available the sustainable urban transitions are to warrant environmental equity. EJ will be measured based on public participation, community engagement and knowledge, awareness and understanding of EJ. This relationship will be examined through procedural justice, concerning who is involved and when, and who has the power to influence decision-making processes (Svarstad & Benjaminsen, 2020). This approach will determine if and how these processes have attributed to environmental injustices over time. The socio-technical transitions of TransformTO will be investigated by looking at three main strategies targeting mobility, infrastructure, and awareness (see section 2.3). These strategies correspond to the infrastructure supply chain at the community level (Seto et al., 2021), with mobility, infrastructure and knowledge being the most common targets under NZ city plans in effect (Seto et al., 2021). These strategies target and affect the community directly and will be main topics of concern for residents of both MP and RP. Selecting short-term goals to research ensures the relevancy of this study, looking at targets that are currently in effect.

Figure 1: Conceptual Framework
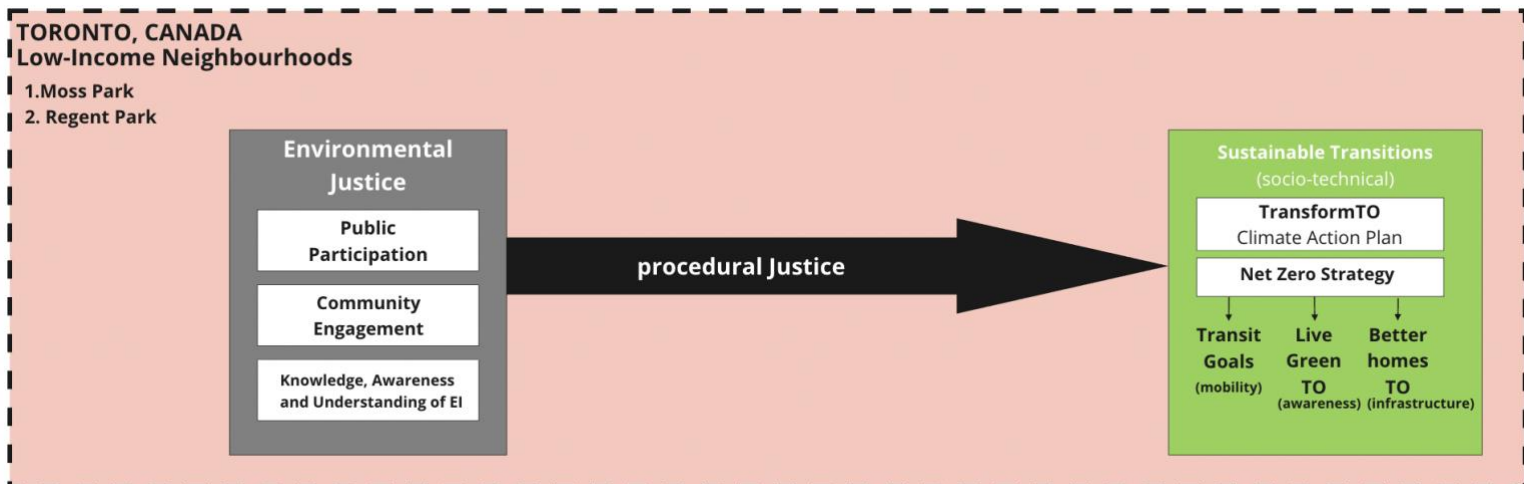
2.5 Hypotheses

Based on previous studies, it is evident that EJ is the response to overall inequity, which correlates to the inequalities recognized by certain communities. The extent of EJ is determined by factors of social, environmental, and economic status in conjunction with time and place. From this, I predict that there will be trends in the extent of EJ felt between two lower income neighbourhoods in Toronto regarding the level of knowledge, awareness, and understanding in the community. These trends are estimated based on the similar demographics between case studies: with similar average household income, location, community housing populations and percentage of immigrant households in comparison to the rest of Ward 13. The level of knowledge a community or individual has may correspond with the level of engagement, which effects the level of participation in climate action incentives. Low EJ, in result of causal inference in public participation, community engagement and knowledge, understanding and awareness, would lead to slower sustainable transitions seen in the city of Toronto. Consequently, this would result in slower achievement of the TransformTO goals.

3: Methodology, Research Design and Data Collection

A Comparative Case study analysis of MP and RP was the methodology selected to analyse the similarities, patterns, and differences across the two cases that share the common goal of EJ (Goodrick, 2020). Identifying possible trends in these neighbourhoods deepened the understanding of how TransformTO has been applied in context over the course of this policy's existence and development. This comparison strengthened my findings, generating a better understanding of how and why certain policies are successful or fail (Goodrick, 2020).

Data collection included focus groups, supporting interviews and desktop research. Triangulation was achieved through the analysis of different data collection methods, further by comparing responses from different sources (community members, experts, and policies). This created a holistic approach to analysis by considering diverse perspectives on TransformTO.

The operationalization table (see Annex A.1) was created to outline how the analysis will be conducted, highlighting the indicators used to measure the variables and what method of data collection will be used. Indicators were determined from previous literature (see section 2) and applied to this study. The operationalization table created structure and transparency to the research conducted, which reduced bias, prejudice and increased the reliability of the findings (see section 3.6).

3.1 Case Studies

  The neighbourhoods selected for this research were RP and MP. Both neighbourhoods are in Toronto Central and a part of Ward 13, governed by newly elected Councillor, Chris Moise (City of Toronto, 2022).
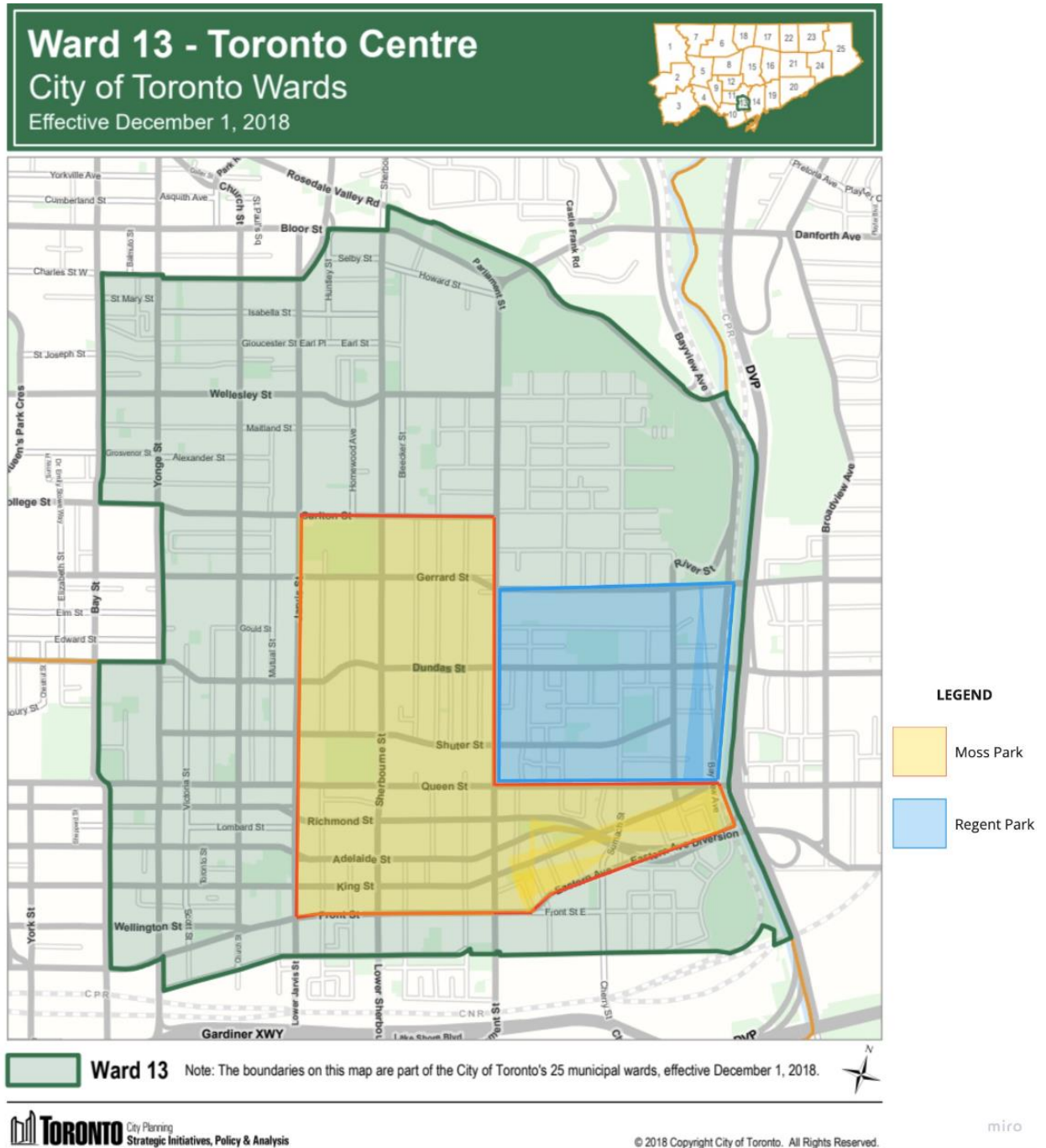
Figure 2: Neighbourhood Locations

Image sourced from: https://www.toronto.ca/wp-content/uploads/2018/11/9963-City_Planning_2018_25WardMaps_Ward13.pdf

The overall size of Ward 13, encompassing over 7 Business Improvement Associations, with neighbourhoods of varied average income, created further interest to this study. This area includes both affluent and low-income areas that border each other, reflecting how diverse this area of the city is. A large Ward with varied neighbourhoods under the power of a single Councillor diluted the needs and concerns of the lower income neighbourhoods within the priorities of the rest of the Ward. The overall census profile summarizing Toronto Centre, though accurately representing the percentage of immigrants, misrepresented these communities regarding overall average income and percentage of renters. RP and MP are neighbourhoods that have similar neighbourhood profiles, according to the latest published census data in 2016, with similar percentage of immigrants; MP with 35.1% and RP 46.9% immigrant population, a high level of rental dwellings; MP with 66% renters, RP with 74.6%, and both with average incomes below the municipal average; MP with an average household income of $52,490CAD and RP averaging $42,369CAD in comparison to the municipal average of $65,829CAD in 2016 (City of Toronto, 2016[1]; City of Toronto, 2016[2]; Statistics Canada & City of Toronto, 2016).

3.2 Focus Groups

Focus groups were conducted as the principal data collection method. One focus group was held per neighbourhood and aimed to each consist of 6-8 participants. Outreach was acquired through email, flyer distribution and snowball effect. Participants were selected at random, limited to those 18+ and to individuals that live in the neighbourhood of study. Focus groups were beneficial when speaking with marginalized communities as the collectivism in the shared experience helped to overcome the structural isolation and to recognise that their individual sufferings had social causes (Wilkinson, 1999).

The focus groups were semi-structured to prompt discussion within the group. Focus groups were online over Zoom, with the duration of the call intended to be approximately two hours. This was the main method selected for data collection as I was able to analyse both the participant's individual responses as well as the dialogue and interactions amongst members within the group (Sim & Waterfield, 2019). This allowed me to identify trends within responses, to identify topics that raised questions and counteractions within the group and concluded overall stances of the focus group as a representation of the larger context of their neighbourhood. Data collected from each focus group was transcribed, coded using Atlas.ti

and compared to find possible trends in participants' responses. Coding was accomplished inductively, using indicators established from literature (see section 2 & Annex A.1) to categorize my findings and to find trends and contrasts throughout all responses. Sub-indicators were added to specify my findings, for example, breaking down the indicator of knowledge and awareness into a sub-indicator of "lack of knowledge" (see Annex A.6)

3.2.1 Focus Group Analysis

The methodologies used when conducting the focus groups were to approach these meetings using practice theory and applied conversation and interaction analysis when reviewing my findings.

Practice theory focuses on how social life is performative (Halkier, 2010); seeing the behaviour, responses and overall attitude toward different topics of conversation, further other respondents, as a result of social influences in their lives that go far beyond the present conversation of the focus group. This theory realized that observing social interaction and behaviour was just as important as the individual responses. A holistic approach to focus groups allowed for an in-depth understanding of the social structures, sense of community, power balances and how well one respondent relates to and understands another (Halkier, 2010).

Focus groups were analysed, not only by the individual responses of participants, but also through the conversation that was created between members of the meeting. Conversation analysis emphasized the social enactments and how social forms amongst the participants influenced responses, recognizing how social action was carried out within the group. Social interaction was key to understanding the practices produced in everyday, social life and how social action is generated within community. Identifying how the conversation was influenced or directed dependent on the responses shared, and how opinions shifted and changed throughout the focus group, further developed my findings. The discourse analysis went beyond the conversation and its social performances, looking further into how participants form unanimity and how they handle disagreements (Halkier, 2010).

Lastly, interaction analysis examined the interactions between the researcher and the participants within the focus group. These interactions identified the thoughts, ideas and arguments around the socio-cultural behaviours between the community member participants and moderator (Belzile & Öberg, 2012). This gave more power to the participants and created a more inclusive environment where conversation flowed easily. Participants could talk freely

on a topic that is traditionally discussed and handled top-down, managed and run by the municipality and other key figures.

Two focus groups were conducted to determine trends and differences between the two different neighbourhoods of focus. Having a focus group that represented each neighbourhood, one for MP and one for RP, ensured that a comparative case study analysis could be used as the primary methodology to this study. Comparison between the results of focus group and interviews furthered my findings of trends in the responses, comparing both interviews in general to focus group findings and the interviews of residents to the focus group of the neighbourhood. This comparison determined whether trends or contrasts in conversation are evident both one on one (in interviews) and in group settings (focus group).

3.3 Interviews

Semi-structured interviews were conducted online with key participants, such as community leaders, to get specific insight on EJ and knowledge of TransformTO. 4-6 interviews were aimed to be completed per neighbourhood. This number was determined to achieve data saturation; realized when no new information is received, information begins to repeat and additional data collection becomes unnecessary (Hennink, Kaiser, & Weber, 2019). A smaller sample was determined to avoid repetition as similar questions were asked in both interviews and focus groups. To support focus group data analysis, responses were also be transcribed, coded on Atlas.ti and compared to find trends in participants responses. Interviews have been a beneficial data collection method creating a personal connection between interviewer and interviewee, delineating narratives of stakeholders and identifying individual opinions, perspectives and thoughts on the topic of conversation (Oliffe, Gonzalez Montaner, & Yu Ko, 2021). Online interviews were selected as it was the most convenient and cost-effective measure to speak with participants. Online interviews allowed for the participants to be in the comfort of their own homes, having them in a safe place to feel secure when sharing their responses. Further, online interviews were more time-effective, eliminating travel time to and from the meeting. Interviews were accessible with the interviewee only needing internet connection and a link to the call (Joshi, Bloom, Spencer, Gaetke-Udager, & Cohan, 2020).

3.4 Secondary Data Collection

Secondary data collection included process tracing and document analysis to find possible trends of inequity and to identify changes over time that have contributed to the present nature of these neighbourhoods. This was completed by examining Canada's open census data, reports done by TransformTO and auxiliary project reports published by the municipality to recognize policy development and change from 2015-present. Process tracing was beneficial to my research to better understand causal dynamics that produced the outcomes of EJ in Toronto over time. This was achieved "using detailed, within-case analysis of how a causal mechanism operated in real-world cases" (Beach & Pedersen, 2019, pg. 1). Causal trends were examined through existing reports and census data. GIS analysis was intended to be completed in the study, however, was not included in this report.

3.5 Limitations

A consequence of the methods chosen was that the results of two neighbourhoods have not accurately reflected all lower-income neighbourhoods. Careful consideration was made when concluding research to avoid generalized findings and to prompt further scientific research on this subject in my conclusion.

Open discussion in a focus group setting risked provoking bias within conversation, having one participant influence responses of another. Confidentiality and anonymity was complicated in group participation, having little control over who may say what outside of the group (Sim & Waterfield, 2019). My online presence limited my abilities to mediate interactions between respondents. I was careful with what questions I asked, how much time I allotted for responses and when to continue.

The targeted group size for the focus groups was not achieved, with four participants in FA and five participants in FB. It was difficult to find individuals willing to participate. The scope of participants was limited to those with access to zoom and to those that were available in the hours that aligned with both time zones. With limited time and the dates available to hold focus groups within the month of May, the sample size was limited to those available in this time frame. Smaller sample size risked a generalized conclusion to my research, having fewer respondents represent a larger demographic in my results. Fortunately, this was not the case, and I was still able to saturate my findings despite a smaller sample size for each focus group.

This was also achieved by doing more interviews than originally intended, completing twelve interviews instead of the originally intended eight. I interviewed a wider range of respondents past the initial scope of speaking with professionals, expanding my interview sample size to also include key residents within each neighbourhood.

GIS analysis was not included in the study due to time restrictions limiting the scope of work that I could complete. This would be a great opportunity for future research to explore this.

3.6 Reliability

I was transparent with my findings, recording all interviews, focus groups, transcribing all meetings and coding all responses. Preliminary surveys were sent out to focus group members to gather background information, similar to interview questions, for further comparison (see Annex A.3.1). To improve the reliability of data, supplementary surveys could be sent to a larger sample size to answer research questions, more accurately representing the neighbourhood of focus. Interviews and focus groups would be hard to replicate as it was semi formal. The responses were specific to the respondents and their experiences in their neighbourhood and with TransformTO.

3.7 Validity

I was able to ask all questions that I wanted to ask my interviewees and focus group members. Triangulation of data was used to support my findings, comparing transcriptions of residents, community leaders and professionals and comparing focus group, interview and desktop research findings to create a holistic conclusion to my study. A voluntary survey was completed by sending a follow-up survey to focus group members (see Annex A.3.2). The research could benefit from peer review. Further, the research could benefit from a longer period for data collection to have more respondents included in the research as well as to see if responses were to change over time from initial outreach.

4: Results, Analysis and Discussion

The following chapter analyses the responses given in interviews and focus groups and is compared with the development of TransformTO through reports and open census data to warrant triangulation (see section 3). Respondents will be referred to by their corresponding code (see Annex A.2).

> **Legend**
>
> A- Neighbourhood 1, Moss Park Resident
> FA- Neighbourhood 1, Moss Park Focus Group
>
> B- Neighbourhood 2, Regent Park Resident
> FB- Neighbourhood 2, Regent Park Focus Group
>
> C- Professional

Section 1: Environmental Justice

4.1 Participation

Overall, most of the respondents are active members in their neighbourhoods (A1, A2, B1, B2, FA1-4, FB1-5), along with professionals speaking about their work with the residents (C1, C2, C4, C5, C7). Residents spoke of both formal and informal social groups, whereas professionals spoke about their occupational contribution to the neighbourhood. The professionals considered participation in a way that was disconnected to the place of focus in comparison to the residents.

RP respondents displayed a deep connection to their neighbourhood, shown in the efforts made to better their community and to help others in need (B1, B2, FB1-5). Verbal and non-verbal cues indicated the care and respect residents have for one another (FB). Unified responses were given in FB; all agreeing with how they participate, what is needed and how they want to see change in their community (FB). Participation in RP focused on current issues of mental health, growing issues of crime, poverty, cost of living, and overall maintenance of public spaces (B2, FB1, FB2, FB4, FB5). It was clear what takes priority in RP, having a strong understanding where the focus of the community should be allocated first.

"People are focusing more on the youth, the mental health in the neighbourhood. So, nobody is going to focus on TransformTO. Things are more important than this to the community." (A1).

MP respondents did not exemplify clear connections amongst their community, feeling that this group does not serve them (A1, A2, FA2). Unlike the unified voice of RP, responses were individualistic, speaking of their own separate level of participation in their community (A1, A2, FA1-4). PP is disconnected, which could affect the impact of these efforts made in the community. For example, participants that were more financially stable approached participation for charity rather than necessity.

"RP has the community to connect people and get projects going. As far as I know, in MP, they do lack those people who we know to listen to, those community leaders… and this must come from within" (C4).

There are trends in the responses between MP and RP that prioritize the well-being for the residents in their neighbourhoods. Respondents most vocal about this are immigrants, supporting one another, validating through affirmative sounds and were respectful of one's time to speak (FB1, FB2, FB4, FB5 FA2, FA3). Existing social inequalities, such as race and culture, are compounded with the inequalities that these respondents have recognized with CC. The immigrant respondents from RP and MP are socially connected, indicating that there is a community formed that goes beyond the geographical boundaries of the neighbourhood.

"You have to stick up for the community you live in, because if you are not at the table, you will be on the menu" (B2).

There is an obligation felt to participate in order to advocate for one's community. If the residents are not present to defend themselves, they feel they will be taken advantage of. Feeling forgotten (FA1, A1) and unimportant (A2, B1, FA1, FA2, FB2, FB4, FB5), not heard or listened to (B2, FA2, FA3, FA4), are trends within responses.

TransformTO has identified the necessity for PP to foster informed decision-making and city-wide participation to reach NZ. The city has provided implementation updates in 2017-2018 and 2019 showing the progression of outreach, leveraged from Live GreenTO through partnerships with different community organizations (City of Toronto, 2018). Neighbourhood Climate Action Grants (NCAG) were introduced to help fund community driven projects (City of Toronto, 2019[1]). There has been evident progress in TransformTO since 2015 (C9), however, most progress is recognized through top-down participation initiatives (C5) and is in early stages of outreach at the community level. The scope of PP is broad and generalized.

The opportunities to participate offered by the City do not correspond with the ways in which respondents of RP and MP like to and are willing to participate. There is a lot of promise made by TransformTO to connect with the community, yet the residents have not recognized any incentive to participate (A1, A2, B1, B2, FA1-4, FB1-5). The City encourages participation through funding programs, Live GreenTO and other public and private partnerships, inviting residents to join panels and round tables to contribute (City of Toronto, 2018). In comparison, the residents see participation through the tangible opportunities that will directly benefit their own neighbourhoods (A1, A2, B1, B2, FA1-4, FB1-5).

"It's important if you live in a community to be part of the community. I think it makes a more vibrant place if there are community participants" (B1).

TransformTO's approach to PP is comparable to the literature, having responsible parties organize ways for the community to be involved (see section 2.1.1). This approach has been proven unsuccessful when applied in context and therefore must be re-evaluated. Nevertheless, barriers affecting participation such as convenience, expense, and lack of interest (City of Toronto, 2018) are shared amongst the residents, professionals and policy documents. Participation is one the three pillars of EJ, therefore, the lack of participation experienced at the neighbourhood level will impact the degree of EJ felt through the process of TransformTO.

4.2 Community Engagement

Overall, there was little CE recognized in MP (C4) or RP (C1). The lack of engagement has been recognized throughout the city, but differs by neighbourhood (A1, A2, B1, B2, FA1-4, FB1-5).

In RP, a lack of engagement has been recognized between the City and the community (B1, B2, FB1, FB2, FB5), affirming huge communication gaps felt that will only get worse (B2). Lack of engagement was identified in 2005, prior to TransformTO, through the Regent Park Revitalization Plan (RPRP). Residents sought additional support to ensure that the community needs of employment, health and safety are met through development. This was only partially rectified through the creation of Regent Park Coalition in 2018 (Brail, Lorinc, St. Louie McBurnie, & Sanz Tovar, 2021). The lack of engagement felt previously is compounded with the lack of engagement with TransformTO. There is engagement within the community itself, spearheaded by resident leadership to promote participation. Residents have recognized community events, work, and volunteer opportunities through the network of trusted residents (B1, B2, C1, C2, FB1-5). Likening to the literature, CE in RP exemplifies the interaction between individuals through the connections within the community. All relationships, both intersectionally and intrasectionally, require trust, confirmation and reassessment, community involvement and collaboration for effective CE (Taylor, Johnston, & Ryan, 2022).

"I like coming into groups where people are brought together through a topic of interest, to learn from friends, and to speak with everybody" (FB5).

Like RP, MP residents have not recognized any engagement with TransformTO (A1, A2, FA1-4, C4, C5). In MP there has not been redevelopment to the scale of RP. Tracing the extent of engagement in MP is more difficult due to a lack of public change in service systems (Vink, Koskela-Huotari, Tronvoll, Edvardsson, & Wetter-Edman, 2021). However, systemic marginalization is evident in MP, with a high percentage of community housing, immigrant, and visible minorities that influence the degree of engagement (C4, C5). These underlying factors have created the societal gaps that have evolved overtime and will progress with the growing pressures of CC. MP residents lack engagement within their own neighbourhood, impacting the dimensions necessary to achieve CE, which in turn impacts the degree of EJ.

"[MP] feels like a forgotten area" (A1).

TransformTO employees did not have a clear understanding of CE or of any context-specific efforts of engagement. This was because CE is not directly within their scope of work (C3, C6). There is a lack of authority for residential engagement and no objective to engage with specific neighbourhoods. This is evident in the responses of the residents feeling neglected (A1, A2, B1, B2, FB1-5, FA1-4) and the City unaware of the extent of outreach specific to MP and RP (C3, C6, C8).

The CE Report was published in 2016 by Live GreenTO and TransformTO, aimed to engage, develop and strengthen relationships across the city by including the public's ideas and interests in the long-term commitment to reach NZ (City of Toronto, 2016[3]). Approximately 3,500 residents participated between 2015-2016, collecting ideas and sharing knowledge across a diverse group of participants. The CE Report reflected the community feedback, however, no public responses were clearly addressed. No further reports were published explicit to engagement, however in the Implementation Plan 2021-2023 Consultation Summary Report, public feedback was documented. This included multiple public meetings, an online survey, a published community conversation guide, the creation of the TransformTO Reference Panel on Climate Action and stakeholder roundtable meetings (City of Toronto, 2020[1]). This report does not accurately represent communities like MP or RP, as outreach within this report included only 16% of participants being visible minorities, and only 35% being renters. Further, the closest meeting was held at St. Lawrence Market, which attracted a far different demographic than MP and RP (City of Toronto, 2020[1]). There does not seem to be any progress made between the 2016 report and 2020, with equitable strategies still in the early phases, maintaining a focus on consultation rather than collaborative action.

4.2.1 Engagement

TransformTO issues annual updates, documenting the progress made to achieve its goals. Publications include TransformTO's Technical Report (2021), CE Report (2016) and Implementation Updates (2017-2018, 2019, 2021, 2022).

The year 2020 was not documented on account of the COVID-19 pandemic (City of Toronto, 2021[1]). Engagement has significantly decreased since the pandemic (B1, B2, C1, FA4), halting any in-person gathering which, in result, stopped CE in MP and RP. Engagement

was moved online, holding town hall meetings over Zoom and events postponed, or cancelled all together. Online platforms do not engage people as much as face-to-face interaction, which necessary to rebuild a community (B1). Though beneficial to some (FA1, FA2, FA3, B1, FB3), others have expressed concern for the varied levels of digital literacy limiting the participation of certain residents (A1, A2, B1, FA4, FB1, FB2, FB4, FB5).

"Communication is handicapped this way right now; word of mouth is the most effective. Online is not enough…. There is still a need for human connection" (FB2).

4.2.2 Accessibility

RP and MP residents feel that TransformTO is not accessible, emphasizing the importance of open communication between the City and its constituents (FA1-4, FB1-5). Approaches to communication must consider how people connect and how communication differs throughout the city. MP and RP have residents that speak little to no English (A1, A2, B2, FB2, FB4) and are limited to the information translated to their mother-tongue. City flyers have been translated in MP (C5), but no comment was made to translations of any other document, website, or meeting.

Professionals have expressed the need for custom approaches to engagement in lower income neighbourhoods (C1, C2, C3, C4, C5, C7, C8, C9). Professionals have expressed the need for more direct engagement with people where they live, as the City is currently not actively seeking PP (C3, C6).

"[TransformTO] may have a lens to get vulnerable communities involved, but I don't see how that is being executed any different [in MP] than any other neighbourhood" (C4).

RP residents were aware of the outreach strategies that work best in their own community, continuing to go door to door as many residents are not present online or on social media (FB2). Direct marketing is necessary in RP to maximize the distribution of information to the neighbourhood (FB2). The Pam McConnell Aquatic Centre acts as the central information hub for the neighbourhood and the city (B2, C1, C2, FB1-5).

The only mention of effective outreach strategies in MP was by respondent FA3, who subscribed to a TransformTO e-newsletter. Information is circulated through community events that the City takes part in, where MP residents come to them (C4).

TransformTO aims to support community organizations and non-profits that emerge from a neighbourhood-basis (City of Toronto, 2018). In 2019, the NCAG provided $101,689.50CAD across 16 Neighbourhood Improvement Associations (NIA), selected from 40 applications to support their resident-led groups (City of Toronto, 2019). Additional support has been provided to neighbourhoods through TransformTO processes, however, lacks established ways to support specific communities within the city (C4).

"I use the word <u>communities</u> rather than <u>neighbourhoods</u> purposely because I don't think [TransformTO] is going to operate best on a geographic neighbourhood basis. A lot of people in geographic neighbourhoods don't know each other, and don't have a good system of communication between neighbours" (C7).

CE will be most effective if outreach focuses more on the social constructs of **community** rather than by the spatial confinements of the **neighbourhood** they are situated in. A sense of community creates a feeling of belonging, forming an inclusive environment that promotes engagement and encourages collective action (FA2, FA3, FB1, FB2, FB5, C1, C4, C5). RP is a designated NIA and MP is not (C9). Without a NIA, MP is partial to the support it can receive, therefore more opportunity is given to RP than MP. The generalization of outreach has furthered the level of injustice felt, specifically in MP (Svarstad & Benjaminsen, 2020).

4.2.3 Trust

RP and MP residents have little trust in the City (A1, A2, B1, B2, FA1-4, FB1-5). There is a discrepancy between political promise and action, leaving respondents doubtful that politicians and key decisionmakers will do as they say.

TransformTO gives status to Toronto as a forerunner in climate action, attracting international investors to help fund these goals. TransformTO has set ambitious targets for the next 17 years, with a multitude of goals, across multiple divisions, to achieve NZ. The overall

size of this strategy has resulted in undisputed doubt from all respondents believing that their city will not achieve NZ by 2040 (A1, A2, B1, B2, C1-9, FA1-4, FB1-5).

"It makes me less motivated to believe [Toronto will reach NZ by 2040] when the goals are something that is nice to look at, but I don't know how we can get there" (C4).

TransformTO is one of many projects currently underway, compounded by the development of the Ontario Line (see section 4.5), the Port Lands Project and a record-breaking number of cranes in the sky. The sheer amount of work that the City is taking on furthers the reservation residents have with the City. MP and RP residents have noted their frustration with how much ongoing construction there is (A1, A2, B1, B2, C1, C3, FA1-4, FB1-5). Toronto is in a state of chaos (B1), with an increase in noise pollution and dust (FA1-4, B1), major roads closed off (A1, A2, B1, B2, C1, C3, C6, FA1-4) and delayed projects that have been pushed years past their expected completion (B1, B2, C4, C5, C8).

"We need little things to be done, we need toilets in our parks" (FB5).

Without a level of commitment, there will be no community trust. This trust must be rebuilt, starting by addressing the fundamental needs of the people. Inviting community comment generates trust in the system (FA3), however action that follows will secure that trust (FB1, FB5). TransformTO was introduced to two neighbourhoods that have a longstanding relationship with the City, where trust has been shaped by other events in time.

RP was established as a housing complex built in the 1940's-1950's, reputed for being a low-income, gang-affiliated, drug dealing neighbourhood, profoundly stigmatized amidst the rest of the city. Political influence played part in the deterioration of this neighbourhood with Prime Minister Brian Mulroney withdrawing funding to social housing, followed by Premier Mike Harris cancelling all social development in 1996 (Brail, Lorinc, St. Louie McBurnie, & Sanz Tovar, 2021). Rebuilding of trust and support is fundamental prior to promoting participation in TransformTO.

Trust had to be gained as a moderator for FB. FB1 introduced me to the group by sharing my social connections to active members of RP. This was necessary information, given

by the community leader, for respondents to sincerely trust me and the work I was doing. Residents were hesitant at first to open up to me, leaving their cameras off and not engaging until my connection to the community was addressed. Expanding on the study by Belzile & Öberg (2012), the extent of interaction between researcher and participants in FB was only possible if trust was established (see section 3.2.1).

MP is one of Toronto's concentrated areas of shelters and temporary housing (C4, C5). Like RP, MP has a proven reputation, with respondents fearing for their family's safety (A1, A2). Unlike RP, MP is only now seeing change through the replacement of John Innes Community Recreation Centre. This project timeline has been delayed due to conflicting Metrolinx Ontario Line Station construction from 2023-2030 (City of Toronto, 2023[1]). In comparison to RP, MP is in much earlier stages of reconciliation, just starting to rebuild trust by responding to community demand for change.

"If somebody from the City of Toronto comes knocking on your door, it doesn't have the same reception as when your neighbour comes knocking" (C7).

Trust is strongest between resident to resident. A strong community is an empowered community, giving power to individuals by being a part of a communal force to see change. Trust should be built from the community level, as a community without trust is not a community at all.

RP has a tight-knit community, evident through how FB interacted throughout the meeting. Each respondent knew each other prior to the focus group, connected through the community WhatsApp group chat and through their volunteer work. Most respondents chose to participate on account of their community leader (FB1) participating in this research.

A sense of community is not evident within MP, resulting in non-profit organizations trying to bring community together (C4, C5). Without a clearly defined community, MP lacks a support system that residents can rely on. FA presented themselves as individuals in their respective focus group rather than the collective voice of RP (see 4.2). There is no sense of unity and connection, which incumbers the level of trust MP residents have in one another.

4.2.4 Confirmation and Reassessment

Public updates and information on TransformTO are not frequently given (FA1, FA4, B1, FB1). Alternate forms of communication, such as flyers and information booths, must be utilized to reach a larger audience, considering the varying levels of accessibility to ensure that outreach is inclusive and available to all (see section 4.2.2). Regular communication between the municipality and citizens will help to maintain the level of trust to ensure PP (see section 4.2.3). Residents are willing to participate, however there is a need to have better communication to understand how to act and proceed (FB1-5). Routine updates are necessary to understand what is being done and the progress being made (FB5).

"The City does a really bad job at telling people what we do. The only reason I know about them [TransformTO goals and progress] is because my job is to help promote them" (C3).

It was recognized by RP and MP that communication is not consistent, with communication essentially stopping around times of election (C4). This study was conducted at a time of a mayoral campaign and newly elected Councillor for Ward 13. This influenced the responses in how well individuals felt updated and informed of TransformTO's progress, as attention was shifted to the election. This further communicates to the residents that CC is not the primary concern for the municipality, which is reflected in the way that MP and RP are reacting to TransformTO.

Apart from the City, information is circulated in RP through resident-led initiatives, RP Neighbourhood Association, the NIA and Toronto Community Housing Corporation (TCHC). In comparison, the only recognized support in MP is the Moss Park Coalition and affiliated Building Roots, established in 2013 (C4, C5). There was no other group or association bringing information to MP residents.

4.2.5 Involvement and Collaboration

TransformTO is created with a specific target audience in mind (C1) to benefit potential investors or budding international relations. Traditional power structures, built on money and status, are still evident in TransformTO. Community involvement takes place on a localized

scale, or as a source to provide feedback to the municipality (A1, A2, B1, B2, C3, C6, FA1-4, FB1-5).

There are two main reports to Council that outline the overall scope of TransformTO. Report 1 (2016) summarised the motions to approve and adopt short-term strategies (City of Toronto, 2016). Report 2 (2017), continued to deepen the goals of the previous report with additional long-term goals, forming the strategies that are implemented today. Report 2 addresses participation with concrete goals and objectives that different sectors can adopt. Sustainable transition goals are outlined, introducing the need to advance social equity (City of Toronto, 2017). Equity was introduced two years after the implementation of TransformTO. Although equity has become one of the main guiding principles for TransformTO (see section 1.2), early stages of policy development did not prioritize equitable engagement and participation. This principle is evident through the CE Report (2016), however specific strategies to target existing inequities at a local scale are not given.

There is a lack of collaboration amongst different civic sectors. Work is often siloed with no collaboration amidst sectors of TransformTO (C3, C6). A common goal that is not executed together results in broken efforts set by different sectors in the City. There is a need to look at approaches to NZ collectively. Sectors should work together rather than in isolation to achieve this shared goal, strengthening the work being done (C3, C6, C8).

Collaboration varied between neighbourhoods. Collaboration is evident in RP, with opportunities sustained through the sense of community built amongst residents (see sections 4.2.1 and 4.2.3).

Respondents from MP, in comparison, did not reflect on any opportunities to work collaboratively within their community, which was further reflected by the individualistic responses within the focus group and interviews (FA1-4, A1, A2).

4.3 Knowledge and Awareness

Overall, there is a lack of knowledge and awareness of the TransformTO plan. Respondents were confused where their community fits within this plan and how they can participate. There was general uncertainty in what CC is. This could be due to varied education levels throughout MP and RP, and the extent of outreach that these neighbourhoods receive from TransformTO (see section 4.2.2). It is essential to have a collective understanding of CC. Knowledge creates

the awareness that fuels the will to participate (see section 4.1). The unfamiliarity of climate action goals and strategies in Toronto affects the extent of PP (see section 2.1.1).

Figure 3 visualizes the comparative analysis between MP and RP. Overall, RP has experienced a greater extent of EJ and has greater opportunity to further justice felt on account of the established sense of community. RPRP has brought public attention to RP, which has further influenced EJ irrespective of TransformTO.

Figure 3: Comparative Analysis Visualization
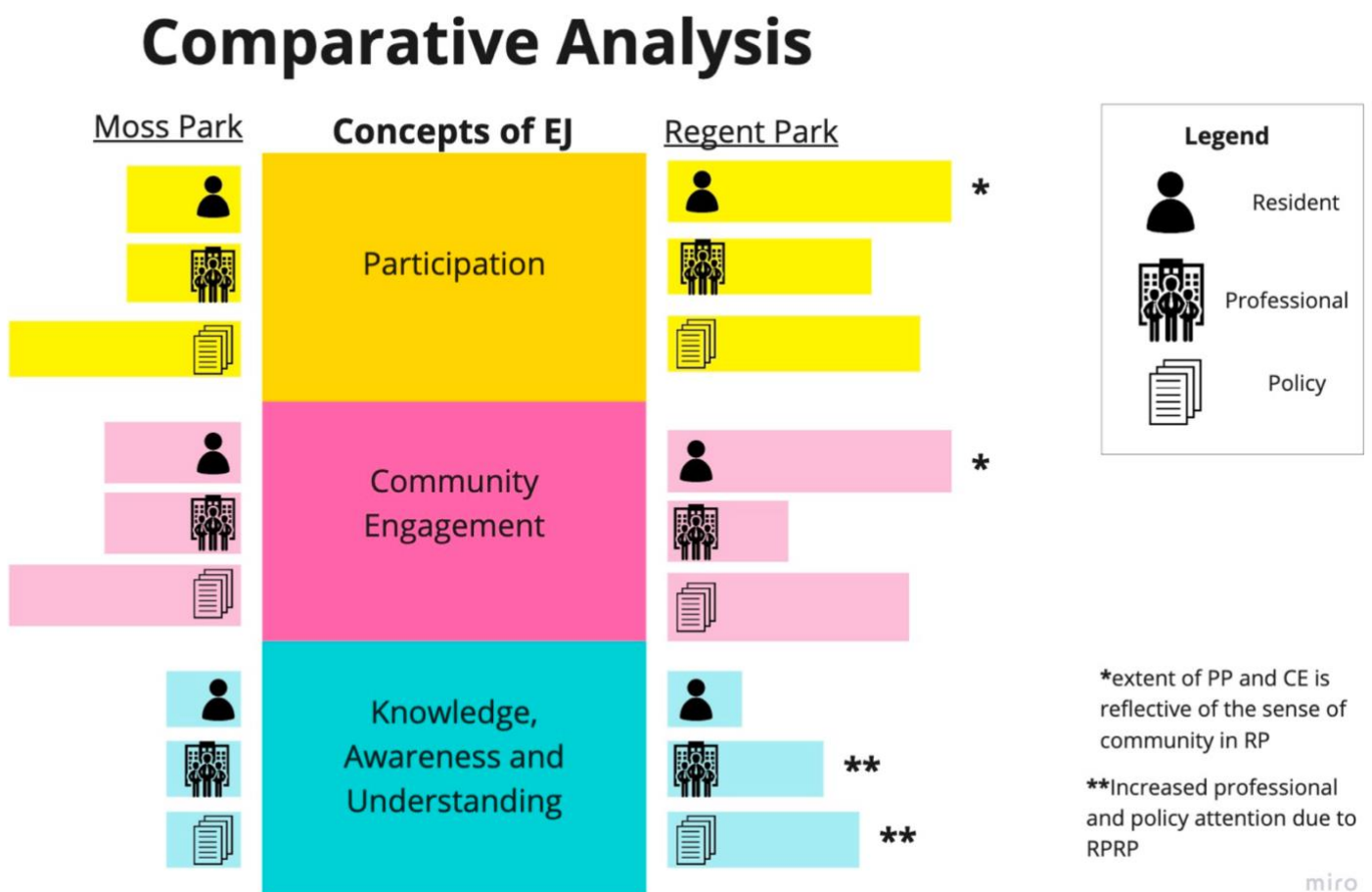
Section 2: Procedural Justice

4.4 (Indicators of) Social Power

Social power was recognized within RP, having most respondents looking to FB1 for guidance (A1, A2, B1, C1, C2, FB2, FB4, FB5). This respondent is a recognized leader within the community. FB1 brings the people together and acts as a key community representative for the municipality. FB1's power was evident through the level of respect and admiration respondents showed this individual (Halkier, 2010). FB1 empowers the community, instilling a sense of meaning to the work being done and fuels a collaborative approach to justice.

In RP, there is better awareness of how overlooked RP is by the City of Toronto. There is trust built (see 4.2.3) to bring these concerns and frustrations to light. Contrary to the literature, a genuine form of power was established without a higher level of status (Perlaviciute & Squintani, 2020), found within the community itself.

There was not a clear community leader established in MP, nor one that participated in this study. This resulted in a lack of grassroot development in this neighbourhood. The absence of a community leader impacts the community development, trust and power that they hold.

Respondents of both neighbourhoods stressed the importance of political power. Councilor Moise (A1, A2, B1, B2, C4, C5, C7, FA1-4, FB1-5) and the city mayor (C3, C6, FB3) were recognized to hold the power to make changes in the city. Power is shared, with private partnerships playing a major part in the development of TransformTO (C3, C6, C7, FA1, FA2, FB1, FB3). Top-down, hierarchical power structures are still prioritized in Toronto, resulting in a lack of power felt by citizens to influence change. Money is seen as the driving factor in developing TransformTO and other projects in MP and RP (B2).

TransformTO reports have emphasized the need for funding to realize these goals. Pathways to NZ requires prompt capacity to scale of programs and policies (City of Toronto, 2021[1]). Initial investment, led centrally by government, is the approach to ensure that these technological advances are widely accessible in the future. The government maintains its traditional position of power in early developments of TransfromTO.

Generally, project development in Toronto is steered by political influence. For example, the election of Rob Ford in 2010 disrupted the work of both RPRP and TCHC. Proceeding Ford, Mayor Tory was elected, who reignited municipal support to TCHC and Regent Park (Brail, Lorinc, St. Louie McBurnie, & Sanz Tovar, 2021). However, Tory initially voted

against the consideration to include TransformTO as a part of the 2017 budget planning process (City of Toronto, 2016). This is indicative of the level of commitment the mayor had at this time to take on these strategies. A key figure, such as the mayor, publicly displaying hesitation to TransformTO impacts the way the public viewed and trusted TransformTO. The future support of TransformTO is dependent on the next mayor to be elected after the completion of this research. MP and RP residents noted that the work to be done is dependent on what newly elected Councillor Moise does and how well he will represent both neighbourhoods making these decisions while in office (A1, A2, B1, FA1-4, FB1-5). The extent of EJ felt is dependent on the political influence shaping the policies changing the city.

4.5 Process

Change is acknowledged by all residents (A1, A2, FA1-4, FB1-5), mostly by the increased construction throughout the city. The processes that can be **seen** are the changes that respondents can grasp. Progress in policymaking and more 'behind the scenes' work that is completed on paper is not known as it is not accessible public information. Residents have difficulty trusting legislative change until action follows (see section 4.2.3).

"It takes so long to see change until they [decisionmakers] experience it themselves" (FB1).

There is a degree of knowledge that cannot be taught and must be experienced first-hand. Key decisionmakers may benefit from immersing themselves within the community to form a deeper understanding of the challenges faced day-to-day. This can ensure that favourable change will be made in a timely manner to best benefit those who are directly affected.

RP has undergone significant change, independent of TranformTO, through RPRP to re-connect the neighbourhood with the rest of the city (C1), while promoting a right-of-return to previous residents to avoid gentrification of this area (C2). The project was created in response to the heavily stigmatized reputation of RP (see section 4.2.3). Since 2016, phase 3 of the project is nearly complete, with phases 4 and 5 issued for tender in 2018 (Brail, Lorinc, St. Louie McBurnie, & Sanz Tovar, 2021). The RPRP is a collaborative effort by the City, TCHC and private developers. Changes to affordable housing policies by City Council in 2018

provided funding to TCHC to further the development of net new affordable units. Additional capital increased the opportunities to involve RP's TCHC residents in the planning processes of phase 4 and 5 (Brail, Lorinc, St. Louie McBurnie, & Sanz Tovar, 2021). However, the status of this project has potentially overshadowed opportunities for TransformTO to introduce strategies in this neighbourhood.

"They don't want to spend anything else in those areas, the City will approach [RP] not wanting to give to this area anything, as they already got resources from the revitalization plan" (FB2).

There is no clear connection between TransformTO, TCHC and RPRP, though targets of equity and NZ development are shared. There is opportunity to unite climate action strategies to avoid overlapping or conflicting work. Again, future progress of these projects will be dependent on political support given to TCHC and RP.

MP is undergoing immense changes, with Metrolinx expanding Toronto's subway system through the construction of the Ontario Line (Metrolinx, 2023). This line is proposed to add a subway station at MP, requiring extensive construction to take place within the neighbourhood. An Environmental Impact Report was completed, which is in accordance with TransformTO's strategy under the Environmental Assessments act (Ontario Line Technical Advisor, 2022). Precautionary steps are being taken to ensure that the construction of the Ontario Line will not heavily impact the environment. However, MP residents have not taken lightly to the construction, frustrated by the lack of information being provided to the neighbourhood and limited consultation and notice of tree removals (FA1-4). Respondent FA2 recounted how CE has wavered throughout the years. Initially, there were community meetings with Metrolinx regarding the Ontario Line, then put on hiatus for about a year. CE resumed after provincial elections in 2022, when internal decisions had already been made, for the purpose of giving the go-ahead for construction (FA2). Trust in key decision-makers has been broken (FA2), affecting the potential for residents to trust TransformTO (see section 4.2.3).

It is important to recognize the progress made in Toronto that parallel the development of TransformTO. This will create transparency from project to project, to understand how citizens are responding to change. There is a sensitivity not to overburden underserved communities, as these residents are already faced with several stresses in their life that take precedent,

concerning their quality of life, safety and health (see section 4.1). Therefore, opportunities to involve and collaborate with MP and RP should be mindful of this.

Section 3: Sustainable Transitions

4.6 Socio-Technical Transitions

TransformTO exemplifies socio-technical transitions through innovative technological advances to achieve the goal of NZ (C3, C6, C7, C8). Certain neighbourhoods have adopted their own approach to transition to carbon-neutral living, which corresponds with the goals outlined by the City (see section 2.3.1). These transitions do not influence RP and MP the same, as certain transition strategies are more accessible than others to these residents. The following sections will analyse three sectors of TransformTO to determine sustainable transition within Toronto and its effects on MP and RP. See section 2.3.2 for details on TransformTO goals. All targets are ongoing, with anticipation to be achieved by 2025.

4.6.1   Better Homes TO

Retrofitting homes requires financial investment and time. Several strategies outlined by TransformTO require participants to be homeowners in order to have the autonomy to make sustainable transformations to one's home (C7). These strategies are limited to homeowners of single dwelling, detached homes and to those that have the financial means to make these changes. Condominium owners face the problem of fragmented ownership and would need unanimous consent to change the building's infrastructure to carbon-neutral solutions. If renting a home or apartment, the tenant has no authority to change anything in the unit without the landlord approving or doing themselves. Subsequently, these strategies are not applicable to many residents in MP and RP (A1, A2, B1, B2, FA1-4, FB1-5).

The NZ Existing Buildings Strategy was introduced in 2021, influencing decarbonization of existing buildings, establishing performance reporting and affordability analysis (City of Toronto, 2021[4]). This strategy is applicable to residents in MP and RP (C2), living in existing units and not looking to move into new ones (A1, B1, FA1, FB3). The municipality has reported on the opportunity to align this strategy with other City initiatives such as RentSafeTO and HousingTO which aim to "protect vulnerable and equity-deserving groups from housing affordability challenges" (City of Toronto, 2021[4], pg. 9). There is no evidence of any progress

or action taken on these conceptions, nor has there been recognition of this by the residents of MP and RP (A1, A2, B2, FA4, FB1, FB2, FB4, FB5).

4.6.2   Live GreenTO

Individual efforts of recycling and conscious energy consumption were most recognized throughout respondents (A1, A2, B1, B2, FA1-4, FB2).

Live GreenTO is a strategy set out by the City with the intention to connect directly with members of the community. Approaches recognized by respondents were Live GreenTO campaigns integrated within existing community events (C3, C4, C6). Therefore, the more community events there are, the more opportunity there is for community outreach. This is dependent on the strength of the community to have these events (see 4.2.1).

Live GreenTO has been present in recent neighbourhood events, such as the MP Market (C4, C5), and at Community Centre events in RP (B2, FB1, FB2). Professionals in MP have noticed the presence of Live GreenTO slowly coming back since the pandemic (C4). Clear resilience actions have been formed for communities to take action to improve safety in their neighbourhoods and to advocate for affordable housing to eliminate poverty (Live GreenTO, 2023). However, no increase of outreach has been noticed (FA1-4, FB1-5), nor any mention of commitment to act on these plans through Live GreenTO (City of Toronto, 2021).

4.6.3   Transit Goals

Most respondents spoke about the bikeability of their neighbourhoods but had no knowledge of the exact TransformTO mobility targets. Residents in RP (B1, FB3) and MP (A1, A2, FA3) have recognized more bike lanes introduced in their neighbourhoods in the past five years. Respondents who spoke most of their experiences biking were those who had the financial means to own a bike. These respondents were Caucasian and Canadian-born. Respondents who identify as a visible minority did not actively use a bike as their means for transportation. This could suggest that there are different cultural barriers to biking (C1). Biking also liberated respondents, feeling free to explore the city however they like (B1, FA1, FA3). There is opportunity to empower individuals through biking.

"Taking in Toronto by foot or bike allows you to see all the opportunities that the city has to offer" (FA3).

Affordability created additional barriers to biking. Biking is only accessible to those that can afford a bike or can use the bike share infrastructure that has recently been introduced to the city. Though the bike share is a more affordable option, the infrastructure is limited to those who have a PRESTO, visa or debit card, and to residents that are near a docking station (FA1, FA3). Subsequently, individuals of a lower economic status are limited in how they can bike around the city.

"There was a huge gap on the bike share map, as to where the stations were. This gap was MP" (C5).

Some individuals do not know how to ride a bike or have forgotten how to (C1). Further, not everyone is aware of road rules and necessary precautions to take to ensure safety on the road. There is a need for programming to teach community members the basic skills of biking and to promote safe cycling.

Currently, there is strong public support for promoting active transportation, with the need to introduce safer, more accessible biking and transit infrastructure (A1, A2, B1, B2, FA1, FA3). Transportation goals include transitioning to electric vehicles, increasing existing transit services, accelerating city-wide transportation, and expanding biking and pedestrian infrastructure (City of Toronto, 2021[2]). In both RP and MP, additional bikeshare docking stations have been added to the neighbourhood (C1, C5).

4.7 Discussion

This study suggests that the extent of EJ is evident through external influences and is being compounded by the socio-technical transitions of TransformTO. Lack of trust, understanding, awareness, engagement and participation have been existent in MP and RP, shaped by previous relations with the City and rooted in systemic marginalization felt over time. Continual development that likens to previous projects, with hierarchal control influenced by money and politics, will continue this trend of suppression, feeding into the problem and making communities like MP and RP even more vulnerable.

Early stages of TransformTO did not require PP to start this project, subsequently disregarding EJ. However, the extent of EJ is heavily dependent on the scope of TransformTO and how strategies are dispersed throughout the city. Over time, by not addressing EJ, marginalization such as income, racialization and health and safety will continue to deteriorate within vulnerable communities.

The need to address equity has been recognized with TransformTO in 2017, understanding that there is a need to look at these goals through an equitable lens to ensure that the city, as a whole, is resilient to CC. The introduction of equity as a guiding principle demonstrates the necessity of EJ for TransformTO to be successful. As the literature states, EJ must look beyond environmental impacts alone, recognizing existing inequities felt within society and how they vary from neighbourhood to neighbourhood (Martin et al., 2020). On the other hand, residents must recognize that EJ encompasses concerns of health, safety, and security. Rather than looking at these challenges as separate battles, residents must understand that these challenges are interconnected and should be addressed as such. This gives opportunity for the City to educate its citizens on how CC affects everyone and every aspect of life.

There were trends in conversation around money and the dependency on investment for the success of TransformTO. Money proved to be a barrier to residents regarding affordability (A1, A2, B2, FA1-4, FB1-5), and a benefit to professionals regarding initial investments to ensure scalability (C4, C6, C8). Money becomes a dividing factor in many decision-making processes and becomes the driving force for power. It is necessary to prioritize initial investment to expedite scalability of the socio-technical innovations being introduced, which will generate accessibility to these amenities. There needs to be a better understanding of how everyone fits in the puzzle of TranformTO, redefining participation to when one can participate rather than if they can.

It was unexpected to find that no respondents believed that NZ targets will be reached by 2040 (refer to section 4.2.3), especially to receive this feedback from professionals working on the TransformTO plan. It was anticipated that experts would be more optimistic regarding a target they are directly working towards. TransformTO professionals voiced their doubts regarding a short timeline (C6), the struggle to ensure collective action throughout the city (C3) and budget (C8). The doubt in TransformTO by the professionals, in conjunction with the wavering support by political figures (see section 4.4) reflects the doubt felt by the citizens.

Better Homes TO targets have been successful in some neighbourhoods, but not in MP and RP. For example, the Pocket neighbourhood, situated in the eastern part of Toronto, has introduced a grassroots initiative to 'get off the gas', promoting the shift to district energy systems by installing geo-exchange systems in individual homes (C7). These residents are well-informed of CC through resident-led CE. Residents also have the financial means to afford retrofitting their homes. This strategy aligns with TransformTO and has created a collaboration between residents and the city, with key community members working in tandem with members of the TransformTO team (C3, C6, C7). In comparison, there is little agency that MP and RP have as they are primarily renters and do not have control to change the way their homes are heated (see section 4.6.1). The systemic lock-in experienced by renters within these communities, specifically those in community housing, is on account of economic status. Novel technologies being introduced at the city level are still quite expensive, only available to those that can afford it. Limitations due to financial status furthers the level of injustice felt. Therefore, economic status limits the capacity of PP, power within the community and inhibits the level of EJ. These pre-existing inequities are compounded through TransformTO. However, MP and RP residents do have a degree of autonomy over the way they personally travel (Transit goals), and how they live in and treat their community (Live GreenTO). These initiatives are accessible to lower-income neighbourhoods as they are affordable, self-promoted and will create noticeable change to their lives and community. These strategies are in line with how residents see PP (see 4.1), putting focus on the community itself and how they want to see change.

There are three timelines identified within this study: TransformTO, CC and Inequity. TransformTO reports date back to 2015, developing over the past 8 years and will continue to progress until 2040 (see section 2.3.2). In comparison, CC is a slightly newer concern of the City, with Mayor Tory declaring "a climate emergency" in 2019 to deepen the "commitment to protecting our economy, our ecosystems and our community from climate change" (City of

Toronto City Council, 2019). The declaration of climate emergency gave validity to TransformTO's climate action plan, however variances in timelines, in conjunction with political doubt, has disconnected the City from this plan. Approaches to CC are siloed, working within their own defined strategies and timelines which can affect the work the other party is doing despite all aiming for the same target of climate action.

NZ strategies were introduced through the Paris Agreement in 2015 (see section 1.1), paralleling TransformTO's induction. Through in line with the global call for action, TransformTO's progress has not matched the rapid pace of CC (C3, C6). In a state of climate emergency, TransformTO's response does not reflect this level of urgency (C4, C7).

Inequities are recurrent and have been felt over time, with no structured timeline, or singular influence. TransformTO incorporated equity in its scope in Report 2 in 2017 (see 4.2.5), which emphasized EJ, however addressing EJ through a set timeline is ineffective. Progress in TransformTO does not reflect progress in equity, as externalities have influenced EJ felt outside the scope of this project. Generally, engagement has helped the success of TransformTO, however the lack of engagement in certain neighbourhoods has proven to slow the development of these goals, seeing little to no change in a significant part of the city. This will in turn effect TransformTO overall, as it is a city-wide plan that requires participation throughout to be successful. When looking at MP and RP, development within Ward 13 itself is varied, with no recognized change seen in these neighbourhoods, in comparison to neighbourhoods such as Riverdale West, Cabbagetown and Corktown (C4, C5). Equitable action is imperative to bring all citizens to the same level, and this must require prioritizing the most vulnerable in the coming years.

5: Conclusions

This research has identified the lack of context-specific approaches to EJ, recognizing the importance of neighbourhood scale analysis through TransformTO. MP and RP residents do not feel justified. EJ is not something residents have directly acknowledged but is recognized in the overall injustice felt compounded with socio-historic patterns of discrimination (see section 2.1). Economic status, cultural identify and neighbourhood reputation are examples of factors that influence the extent of EJ. Therefore, the need for justice encompasses all inequities. The extent of EJ felt is dependent on the extent of knowledge in CC. The more knowledge a community has, the more likely they will recognize EJ, enabling communities to seek action. Placing power in the community helps to recognize the challenges faced within community and the needs that must be addressed. Information exchange between community and city-level power is vital. The City should be accountable for educating the public on CC and ongoing development of TransformTO. This knowledge will empower the community to participate in decision-making processes by contributing their direct understanding of the challenges faced on the ground. Therefore, the conceptual framework (see section 2.4) must be reconsidered. Procedural justice should reflect the reciprocity between residents and key leaders to ensure equitable decision-making in sustainable transitions like TransformTO. EJ is not only dependent on the accessibility and availability to TransformTO, but also on those that have the power to influence policy development.

To answer the research question, there are general patterns of EJ on account of income, race, gender, culture, and immigrant status. However, associating the extent of EJ to socio-economic status alone risks the generalization of how these injustices are felt and how they may differ. Therefore, there needs to be a careful approach to the main research question of this thesis, considering other influences on EJ in conjunction with factors of economic status. Moreover, these inequities differ in context. In result, MP has perceived TransformTO differently in comparison to RP. This study has recognized the unique constructs and constraints of MP and RP. RP epitomised a neighbourhood with a strong sense of community with an evident network of people led by FB1. RP residents are empowered through their community, feeling confident to advocate for their rights through a united voice. The neighbourhood has undergone immense change with RPRP, creating new opportunities for justice. However, RP's power from the community alone gives minimal influence in comparison to the power needed to influence policymaking driven by key authorities. In

comparison, MP is a neighbourhood that is disconnected, with no identified network of residents or community leader. MP is a place that feels forgotten by the residents, seeing only recent change that is not widely accepted. Both neighbourhoods have not recognized EJ in relation to TransformTO. RP has more potential to be included in these targets as there is a strong community that will work together on these targets, once made aware of them. The social network of RP can benefit the city in strategies to engage with residents. To develop EJ in MP, the community must be built up first. There will be no progress made if there is no community network to support it. TransformTO should incorporate outreach with community development to foster these relationships and to motivate MP residents to work together.

Different social structures within RP and MP do not influence the shared extent of power felt within the city. MP and RP participation in TransformTO is limited due to the extent of agency being mainly renters with limited disposable income to invest in innovative technological solutions. Limitations due to financial status furthers the level of injustice felt. Therefore, economic status limits the capacity to participate, locking-in existing power structures and lowers EJ. Factors of race, immigrant and cultural identity further compound inequities felt on account of financial status.

Lower income neighbourhoods perceive EJ through the challenges faced directly within the community. The inequities recognized are necessities that need immediate attention such as safety, security, affordability, and health. Conversely, the City has approached EJ through the development of TransformTO using a theoretical, policy-based approach, targeting equity through abstract strategies made at the city level. TransformTO is a generalized plan, lacking specific goals to target different levels of income, race, culture, gender etc. This is experienced by MP and RP respondents, recognizing that the city's existing strategies to engage with the community, through email newsletters and digitizing TransformTO information, do not work well in their neighbourhood. The broad scope of TransformTO contrasts the focused scope of EJ presented by MP and RP residents.

TransformTO is incorporating equity as one of the main guiding principles, emphasising the importance of EJ within climate action and how integral it is to sustainable development. This public acknowledgement of EJ has resulted in a shift in policymaking from the City, progressing with mindful efforts to include marginalized communities in TransformTO through updated reports (see section 4.2.1). However, there needs to be further steps of action to achieve these goals. EJ has not progressed in MP and RP as pre-existing

inequalities have yet to be addressed (see section 4.1). Moreover, residents have no knowledge about TransformTO to see progress.

The three concepts of EJ discussed in this report are PP, CE and knowledge and awareness. These concepts are interconnected and integral to TransformTO's success. PP needs effective CE strategies that are custom fit to the neighbourhood of focus. Effective PP is dependent on the level of knowledge and awareness that the public has of CC and TransformTO. The strength of community often parallels the level of CE and PP; the stronger the community, the more willing its residents are to participate. The extent of power can enable communities the ability to influence decision-making processes. Power redistribution must be considered to empower residents.

5.1 Limitations of Study

This study took place during an ongoing mayoral election. Ward 13 also only recently appointed Councillor Moise. This risked political conversations to be neutral, as there were new people in power at multiple levels of government. This did transpire; respondents were reserved in their political opinions as the new leaders have yet to prove themselves to their constituents. To mitigate this risk, I directed the conversation to discuss former political leaders and respondents' past experiences with politicians. This allowed me to analyse causal effects that have resulted in the prejudice felt toward politicians and key leaders.

Most FB respondents were from the same social circle (see section 4.2.3), connected through FB1, which risked bias in the responses of this focus group. This risked the misrepresentation of the overall community, as the sample represented a singular social network. This risk was avoided by including FB3, whom had no prior relations to this group. Introducing a new person into FB expanded conversation beyond the pre-existing circle of people. Most conversation was between FB3 and the rest of the group. Moreover, I interviewed additional RP residents that had no relations to FB1 to ensure a holistic approach to my findings.

5.2 Implications of Study

Throughout the process of mediating focus groups, I acted as a liaison between TransformTO and the community. This was received quite well; I noticed that when the community members are engaged, they are interested in learning more and eager to continue conversations of TransformTO and CC. There is a communication gap between the community and the city, presenting the need for someone to fill this role to connect the two parties. TCHC is a great binder between community housing residents and the city and could act as a representative for the tenants. Live GreenTO works directly with the community and could utilize this connection to bring CC knowledge to residents by integrating TransformTO goals through their work. Future research can explore how to foster these interdependent relationships. Exploring the redistribution of power could help recognize the degree of CE that is most beneficial to policy making. This study has shown how the City can benefit from its citizens and vice-versa, highlighting that both parties need each other to see success in TranformTO.

Future research could analyse the process of EJ throughout the election and after, seeing how different political figures influence the extent of EJ felt within MP and RP. Analysing the extent of EJ felt over a longer period, extending this study to cover months, or years, could further substantiate the argument of what influences EJ and how that may evolve over time. Additional outreach to speak with random individuals around the city would be interesting to recognise a more city-wide perspective about these neighbourhoods, how they are perceived and what they believe should be done to better both Moss Park and Regent Park. This research could be replicated in other lower income neighbourhoods within Toronto, or other cities, to further develop an understanding of neighourhood-scale perception of EJ and climate action strategies.

Community has generated the opportunity for the involvement and influence citizens can have on socio-technical transitions in Toronto. TransformTO is still in early stages of development, focusing on policy development and generating investment to accelerate progress. There is an opportunity to use the power of community to foster effective CE in TransformTO through applying an equitable lens to policy development.

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Bibliography

Allen, M. R., Friedlingstein, P., Girardin, C. A. J., Jenkins, S., Malhi, Y., Mitchell-Larson, E., . . . Rajamani, L. (2022). Net zero: Science, origins, and implications. *Annual Review of Environment and Resources, 47*(1), 849-887. doi:10.1146/annurev-environ-112320-105050

Anguelovski, I., Connolly, J. J. T., Cole, H., Garcia-Lamarca, M., Triguero-Mas, M., Baró, F., . . . Martinez Minaya, J. (2022). Green gentrification in european and north american cities. *Nature Communications, 13*, 3816. doi:https://doi.org/10.1038/s41467-022-31572-1

Beach, D., & Pedersen, R. B. (2019). *Process-tracing methods: Foundations and guidelines* University of Michigan Press.

Belzile, J. A., & Öberg, G. (2012). Where to begin? grappling with how to use participant interaction in focus group design. *Qualitative Research, 12*(4), 459-472.

Brail, S., Lorinc, J., St. Louie McBurnie, K., & Sanz Tovar, L. (2021). *Regent park progress report.* (). Retrieved from https://metcalffoundation.com/publication/regent-park-a-progress-report/

Chu, E. K., & Cannon, C. E. (2021). Equity, inclusion, and justice as criteria for decision-making on climate adaptation in cities. *Current Opinion in Environmental Sustainability, 51*, 85-94. doi:10.1016/j.cosust.2021.02.009

City of Toronto City Council. (2016). *Report (item - 2016.PE15.1).* (). Toronto, Canada: City of Toronto. Retrieved from https://secure.toronto.ca/council/agenda-item.do?item=2016.PE15.1

City of Toronto. (2016[1]). *Neighbourhood report, Moss Park.* (). Retrieved from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2016/pdf1/cpa73.pdf

City of Toronto. (2016[2]). *Neighbourhood report, Regent Park .* (). Retrieved from https://www.toronto.ca/ext/sdfa/Neighbourhood%20Profiles/pdf/2016/pdf1/cpa72.pdf

City of Toronto (2016[3]). *TransformTO: Climate Action for a Healthy, Equitable, and Prosperous Toronto – Community Engagement Report.* Retrieved from

https://www.toronto.ca/wp-content/uploads/2019/09/912f-TransformTO-Community-Engagement-Report-2015-2016.pdf

City of Toronto City Countil. (2017). *PE19.4 - TransformTO: Climate action for a healthy, equitable and prosperous toronto - report 2 - the pathway to a low carbon future.* (). Toronto, Canada: City of Toronto. Retrieved from https://secure.toronto.ca/council/agenda-item.do?item=2017.PE19.4

City of Toronto: Energy and Climate Division. (2018). TransformTO: Climate action for a healthy, equitable & prosperous toronto. Retrieved from https://www.toronto.ca/wp-content/uploads/2020/02/92f8-TransformTO-Climate-Action-for-a-Healthy-Equitable-Prosperous-Toronto-Implementation-Update-2017-and-2018.pdf

City of Toronto City Council. (2019). *MM10.3 - declaring a climate emergency and accelerating toronto's climate action plan - by mayor john tory, seconded by councillor mike layton.* (). Toronto, Canada: City of Toronto. Retrieved from https://secure.toronto.ca/council/agenda-item.do?item=2019.MM10.3

City of Toronto Energy and Environment Division. (2019[1]). *TransformTO 2019 implementation plan.* (). Toronto, Canada: City of Toronto. Retrieved from https://www.toronto.ca/wp-content/uploads/2020/11/96aa-TTO-2019-Update-June2020-FINAL-AODA.pdf

City of Toronto (2020). TranformTO Engagement. Retrieved from https://www.toronto.ca/wp-content/uploads/2017/10/917b-TransformTO-Engagement-and-Equity-Report-2016.pdf

City of Toronto. (2020[1]).   TransformTO implementation plan 2021-2023 consultation summary report. Retrieved from https://www.toronto.ca/wp-content/uploads/2020/10/8e41-TransformTO-Implementation-Plan-Consultation-Summary-Final-AODA.pdf

City of Toronto, & Live Green Toronto. (2021). *TransformTO Net Zero Strategy*

Retrieved from https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/transformto/

City of Toronto, Live GreenTO, & Sustainability Solutions Group. (2021[1]). *TransformTO net zero strategy technical report .* ().City of Toronto. Retrieved

from https://www.toronto.ca/wp-content/uploads/2022/04/8f02-TransformTO-Net-Zero-Framework-Technical-Report-Parts-1-2.pdf

City of Toronto. (2021[2]). *Climate action annual report 2022: TransformTO short-term implementation plan (2022-2025).* (). Toronto, Canada: City of Toronto. Retrieved from https://www.toronto.ca/legdocs/mmis/2021/ie/bgrd/backgroundfile-173757.pdf

City of Toronto (City Deputy Manager). (2021[3]). *TransformTO: Critical steps for net zero by 2040.* Toronto, Canada: Retrieved from https://www.toronto.ca/legdocs/mmis/2021/ie/bgrd/backgroundfile-173756.pdf

City of Toronto. (2021[4]). *Net Zero Existing Buildings Strategy* . (). Toronto, Canada: City of Toronto. Retrieved from https://www.toronto.ca/legdocs/mmis/2021/ie/bgrd/backgroundfile-168400.pdf

City of Toronto. (2022). Members of council- Councillor Chris Moise. Retrieved from https://www.toronto.ca/city-government/council/members-of-council/councillor-ward-13/

City of Toronto. (2023). About Toronto. Retrieved from https://www.toronto.ca/community-people/moving-to-toronto/about-toronto/

City of Toronto. (2023[1]). *Moss park park improvements & john innes community recreation centre replacement.* ().City of Toronto. Retrieved from https://www.toronto.ca/city-government/planning-development/construction-new-facilities/improvements-expansion-redevelopment/moss-park-redevelopment/

Cole Amy. (2012). *A city that works: An urban analysis of the city of toronto*

Cook, K. S., & Hegtvedt, K. A. (1983). Distributive justice, equity, and equality. *Annual Review of Sociology, 9*(1), 217-241. doi:10.1146/annurev.so.09.080183.001245

Covey, S. R., & Merrill, R. R. (2006). *The speed of trust: The one thing that changes everything* Simon and schuster.

Davis Leona, F., & Ramírez-Andreotta Mónica, D. (2019) Participatory research for environmental justice: A critical interpretive synthesis. *Environmental Health Perspectives, 129*(2019), 026001. doi:10.1289/EHP6274

Ebi, K. L., & Hess, J. J. (2020). Health risks due to climate change: Inequity in causes and consequences. *Health Affairs, 39*(12), 2056-2062. doi:10.1377/hlthaff.2020.01125

Frantzeskaki, N., Castán Broto, V., Coenen, L., & Loorbach, D. (2017). Urban sustainability transitions: The dynamics and opportunities of sustainability transitions in cities. In N. x Frantzeskaki, V. Castán Broto, L. Coenen & D. Loorbach (Eds.), *Urban sustainability transitions* (pp. 1-19). New York: Routledge. Retrieved from https://vbn.aau.dk/ws/portalfiles/portal/279141503/9781315228389_preview.pdf

Gibson-Wood, H., & Wakefield, S. (2013). "Participation", white privilege and environmental justice: Understanding environmentalism among hispanics in toronto. *Antipode, 45*(3), 641-662. doi:10.1111/j.1467-8330.2012.01019.x

Givens, J. E., Huang, X., & Jorgenson, A. K. (2019). Ecologically unequal exchange: A theory of global environmental injustice. *Sociology Compass, 13*(5), e12693. doi:10.1111/soc4.12693

Goodrick, D. (2020). *Comparative case studies* SAGE Publications Limited Thousand Oaks.

Graaf-van Dinther, R. d. (2021). *Climate resilient urban areas : Governance, design and development in coastal delta*. Cham: Palgrave Macmillan. doi:https://doi.org/10.1007/978-3-030-57537-3

Greene, C. S., Robinson, P. J., & Millward, A. A. (2018). Canopy of advantage: Who benefits most from city trees? *Journal of Environmental Management, 208*, 24-35. doi:10.1016/j.jenvman.2017.12.015

Halkier, B. (2010). Focus groups as social enactments: Integrating interaction and content in the analysis of focus group data. *Qualitative Research, 10*(1), 71-89.

Hampton, G. (1999). Environmental equity and public participation. *Policy Sciences, 32*(2), 163-174. doi:10.1023/A:1004591620163

Harris, S., Weinzettel, J., Bigano, A., & Källmén, A. (2020). Low carbon cities in 2050? GHG emissions of european cities using production-based and consumption-based emission accounting methods. *Journal of Cleaner Production, 248*, 119206. doi:10.1016/j.jclepro.2019.119206

Hassen, N. (2021). Leveraging built environment interventions to equitably promote health during and after COVID-19 in toronto, canada. *Health Promotion International, 37*(2), daab128. doi:10.1093/heapro/daab128

Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? estimating sample sizes in focus group research. *Qualitative Health Research, 29*(10), 1483-1496.

Hodgson, G. M. (2016). Conceptualizing capitalism: A summary. *Competition & Change, 20*(1), 37-52.

IPCC. (2007). *Climate change 2007: Impacts, adaptation and vulnerability.* (). New York, NY: Cambridge University Press. Retrieved from https://www.ipcc.ch/site/assets/uploads/2018/03/ar4_wg2_full_report.pdf

IPCC. (2020). The concept of risk in the IPCC sixth assessment report: A summary of cross working group discussions: Guidance for IPCC authors. In A. Reisinger, M. Howden, C. Vera, M. Garschagen, M. Hurlbert, S. Kreibiehl, . . . R. Ranasinghe (Eds.), *The IPCC sixth assessment report* (pp. 1-15). Cambridge: Cambridge University Press.

Joshi, A., Bloom, D. A., Spencer, A., Gaetke-Udager, K., & Cohan, R. H. (2020). Video interviewing: A review and recommendations for implementation in the era of COVID-19 and beyond. *Academic Radiology, 27*(9), 1316-1322. doi:10.1016/j.acra.2020.05.020

Kerr, R. A. (2001). It's official: Humans are behind most of global warming. *Science.Org,* Retrieved from https://www.science.org/doi/10.1126/science.291.5504.566A

Koomen, E., van Bemmel, M. S., van Huijstee, J., Andrée, B. P. J., Ferdinand, P. A., & van Rijn, F. J. A. (2023). An integrated global model of local urban development and population change. *Computers, Environment and Urban Systems, 100*, 101935. doi:10.1016/j.compenvurbsys.2022.101935

Lamb, W. F., Wiedmann, T., Pongratz, J., Andrew, R., Crippa, M., Olivier, J. G., . . . House, J. (2021). A review of trends and drivers of greenhouse gas emissions by sector from 1990 to 2018. *Environmental Research Letters, 16*(7), 073005.

Larsen, K., & Gunnarsson-Östling, U. (2009). Climate change scenarios and citizen-participation: Mitigation and adaptation perspectives in constructing sustainable futures. *Habitat International, 33*(3), 260-266. doi:10.1016/j.habitatint.2008.10.007

Lenton, T. M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points - too risky to bet against. *Nature, 575*, 592-595. doi:https://doi.org/10.1038/d41586-019-03595-0

Live GreenTO. (2023). Climate energy and resilience: Environmental plans & reports: Resilience strategy progress. Retrieved from https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/resilientto/resilience-actions/

Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability transitions research: Transforming science and practice for societal change. *Annual Review of Environment and Resources, 42*, 599-626.

Martin, A., Armijos, M. T., Coolsaet, B., Dawson, N., Edwards, G.,A.S., Few, R., . . . White, C. S. (2020). Environmental justice and transformations to sustainability. *Environment: Science and Policy for Sustainable Development, 62*(6), 19-30. doi:10.1080/00139157.2020.1820294

Metrolinx. (2023). Ontario line. Retrieved from https://www.metrolinx.com/en/projects-and-programs/ontario-line

Newell, P., Srivastava, S., Naess, L. O., Torres Contreras, G. A., & Price, R. (2021). Toward transformative climate justice: An emerging research agenda. *WIREs Climate Change, 12*(6), e733. doi:10.1002/wcc.733

Oliffe, J. L., Kelly, M. T., Gonzalez Montaner, G., & Yu Ko, W. F. (2021). Zoom interviews: Benefits and concessions. *International Journal of Qualitative Methods, 20*, 16094069211053522.

Ontario Line Technical Advisor. (2022). *Environmental impact assessment report.* (). Toronto, Canada: City of Toronto. Retrieved from https://assets.metrolinx.com/image/upload/v1663152365/Documents/Metrolinx/ontario_line_final_environmental_impact_assessment_report_-_aoda_b6yhxp.pdf

Ostrom, E. (1990). *Governing the commons : The evolution of institutions for collective action*. Cambridge University Press: Cambridge. Retrieved from https://wtf.tw/ref/ostrom_1990.pdf

Perlaviciute, G., & Squintani, L. (2020). Public participation in climate policy making: Toward reconciling public preferences and legal frameworks. *One Earth, 2*(4), 341-348. doi:10.1016/j.oneear.2020.03.009

Rahmann, H., & Jonas, M. (2011). Urban Voids: the hidden dimension of temporary vacant spaces in rapidly growing cities.

Ruano-Chamorro, C., Gurney, G. G., & Cinner, J. E. (2022). Advancing procedural justice in conservation. *Conservation Letters, 15*(3), e12861. doi:10.1111/conl.12861

Scott, A. J., & Storper, M. (2014). The nature of cities: The scope and limits of urban theory. *International Journal of Urban Regional Research, 39*(1), 1-15.

Seneviratne, S. I., Zhang, X., Adnan, M., Badi, W., Dereczynski, C., Luca, A. D., . . . Zhou, B. (2021). Weather and climate extreme events in a changing climate. In IPCC (Ed.), *Climate change 2021: The physical science basis. contribution of working group I to the sixth assessment report of the intergovernmental panel on climate change* (pp. 1567-1569). Cambridge: Cambridge University Press.

Seto, K. C., Churkina, G., Hsu, A., Keller, M., Newman, P. W. G., Qin, B., & Ramaswami, A. (2021). From low- to net-zero carbon cities: The next global agenda. *Annual Review of Environment and Resources, 46*(1), 377-415. doi:10.1146/annurev-environ-050120-113117

Sim, J., & Waterfield, J. (2019). Focus group methodology: Some ethical challenges. *Quality & Quantity, 53*(6), 3003-3022. doi:10.1007/s11135-019-00914-5

Soken-Huberty, E. (2022). Inequity vs. inequality: An explainer. Retrieved from https://www.humanrightscareers.com/issues/inequity-vs-inequality-an-explainer/

Statistics Canada, & City of Toronto. (2016). *Toronto centre demographic profiles.* (). Retrieved from https://www.toronto.ca/city-government/data-research-maps/neighbourhoods-communities/ward-profiles/ward-13-toronto-centre/

Statistics Canada. (2023). *Census of population, 2021 [canada]: Data tables, population and dwelling counts [B2020 & CSV]* Borealis. doi:10.5683/SP3/7K6XGQ

Stelkia, K. (2020). Police brutality in canada: A symptom of structural racism and colonial violence. *Yellowhead Institute, 72*

Svarstad, H., & Benjaminsen, T. A. (2020). Reading radical environmental justice through a political ecology lens. *Geoforum, 108*, 1-11. doi:10.1016/j.geoforum.2019.11.007

Sze, J., & London, J. K. (2008). Environmental justice at the crossroads. *Sociology Compass, 2*(4), 1331-1354. doi:10.1111/j.1751-9020.2008.00131.x

Taylor, M., Johnston, K. A., & Ryan, B. (2022). A community engagement approach to natural hazard communication. *The handbook of crisis communication* (pp. 327-342) doi:10.1002/9781119678953.ch22 Retrieved from https://doi.org/10.1002/9781119678953.ch22

Teelucksingh, C., Poland, B., Buse, C., & Hasdell, R. (2016). Environmental justice in the environmental non-governmental organization landscape of toronto (canada). *The Canadian Geographer / Le Géographe Canadien, 60*(3), 381-393. doi:10.1111/cag.12278

Thomas, K., Hardy, R. D., Lazrus, H., Mendez, M., Orlove, B., Rivera-Collazo, I., . . . Winthrop, R. (2019). Explaining differential vulnerability to climate change: A social science review. *WIREs Climate Change, 10*(2), e565. doi:10.1002/wcc.565

UN Habitat (2011). Hot cities: Battleground for climate change. global report on human settlement 2011.

UN Habitat (2015). *National urban policy: A guiding framework*. Nairobi: United Nations Human Settlements Programme (UN-Habitat). Retrieved from http://urbanpolicyplatform.org/wp-content/uploads/2019/11/NUP-Guiding-Framework.pdf

UN. (2016). List of parties that signed the paris agreement on 22 april. Retrieved from https://www.un.org/sustainabledevelopment/blog/2016/04/parisagreementsingatures/

UNEP. (2020). *Emissions gap report 2020*. Nairobi: United Nations Environment Programme

United Nations (2015). Paris agreement. *Int'L Legal Materials, 55*(4), 743-755. Retrieved from https://heinonline.org/HOL/P?h=hein.journals/intlm55&i=803 https://heinonline.org/HOL/PrintRequest?handle=hein.journals/intlm55&collection=0&div=46&id=803&print=section&sction=46

United Nations (2022). Global Issues: Population. Retrieved April 29, 2023, from https://www.un.org/en/global-

issues/population#:~:text=Our%20growing%20population&text=The%20world's%20populat
ion%20is%20expected,billion%20in%20the%20mid%2D2080s.

Vaz, E., Anthony, A., & McHenry, M. (2017). The geography of environmental injustice. *Habitat International, 59*, 118-125. doi:10.1016/j.habitatint.2016.12.001

Vink, J., Koskela-Huotari, K., Tronvoll, B., Edvardsson, B., & Wetter-Edman, K. (2021). Service ecosystem design: Propositions, process model, and future research agenda. *Journal of Service Research, 24*(2), 168-186.

Wei, T., Wu, J., & Chen, S. (2021). *Keeping track of greenhouse gas emission reduction progress and targets in 167 cities worldwide* Retrieved from https://www.frontiersin.org/articles/10.3389/frsc.2021.696381/full

Whitehead, J., L. Pearson, A., Lawrenson, R., & Atatoa-Carr, P. (2019). How can the spatial equity of health services be defined and measured? A systematic review of spatial equity definitions and methods. *Journal of Health Services Research & Policy, 24*(4), 270-278.

Wilkinson, S. (1999). Focus groups: A feminist method. *Psychology of Women Quarterly, 23*(2), 221-244.

Wilson, G. A. (2014). Community resilience: Path dependency, lock-in effects and transitional ruptures. *Journal of Environmental Planning and Management, 57*(1), 1-26. doi:10.1080/09640568.2012.741519

Yigitcanlar, T., Dur, F., & Dizdaroglu, D. (2015). Towards prosperous sustainable cities: A multiscalar urban sustainability assessment approach. *Habitat International, 45*, 36-46. doi:10.1016/j.habitatint.2014.06.033

Zahra, A. M. (2023). Educational institutions and climate change awareness: "Analytical study of UNESCO's document on climate action". *Port Said Journal of Educational Research, 2*(1), 1-33. doi:10.21608/psjer.2023.178668.1010

Annex

A.1 Operationalization Table

Concept	Variable	Indicator	Collection Method
Environmental Justice Definition: The social movement that has emerged in response to the social problems of environmental inequity (Sze & London, 2008), which emphasizes the unequal distribution of environmental costs, benefits, and paralleled outcomes of an individuals' well-being, seeking to understand both the connecting and central drivers to these injustices (Martin et al., 2020).	• Public Participation Definition: "The processes organized by responsible parties to deliberately engage the public in the planning, development, and implementation of climate policies" (Stern & Dietz, 2008; Perlaviciute & Squintani, 2020, pg. 341) • Community Engagement Definition: Community Engagement "describes an interaction between an individual" "with social-level dimensions of efficacy, participation, and relationships" which is achieved through "engagement, trust" "confirmation and reassessment, community involvement and collaboration" (Taylor, Johnston, & Ryan, 2022, pg. 330) • Knowledge & Awareness Definition: Knowledge and awareness of the phenomenon of climate change is achieved through learning, and enables	(Public Participation) Inclusivity: How involved participants feel in decision-making processes of TransformTO. (Community Engagement) Accessibility: How accessible resources, information, services and opportunities to be involved are to lower income neighbourhoods- Personal insight to the extent of accessibility the community has Engagement: What methods of engagement have been used to connect with the community? To what extent do the community members feel engaged? Trust: How much do community members trust TransformTO? How much do they trust the decision-makers involved in TransformTO? Confirmation and Reassessment: How often is the community updated with changes of TransformTO's policies? Are these changes confirmed by the public? Are there periodic check-ins/updates? Involvement and Collaboration: To what extent does the city work with the community to promote collaborative	(Inclusivity) Primary, Qualitative Data Collection - Focus Groups - Interviews (Community Engagement) Primary, Qualitative Data Collection - Focus Groups - Interviews (Knowledge and Awareness) Primary, Qualitative Data Collection - Focus Groups - Interviews

| | "individuals to prepare to face this phenomenon and try to mitigate its effects on societies" (Zahra, 2023, pg. 1) | work? Does the community feel that they are a part of collaborative decision-making processes? To what extent does the public feel involved?

(Knowledge and Awareness)

What is the community's level of knowledge, awareness and understanding of climate change?

To what extent do the communities know about the transit goals, live green TO and better homes TO strategies, further how they are affecting their own neighbourhoods? Trends in responses to be identified.

How well do the participants know of the TransformTO Net Zero Plan? To what extent do these communities feel that the city has tried to communicate these goals to them? Trends in responses to be identified. | |
| **Procedural Justice**

<u>Definition:</u>

Procedural justice "involves issues of decision-making and power", looking at "various power perspectives, involving historical processes behind environmental | • Process Definition: A systemic understanding of "intentional, long-term change in service systems" and how these changes emerge (Vink, Koskela-Huotari, Tronvoll, Edvardsson, & Wetter-Edman, 2021, pg. 168). | (Indicators of (Social) Power)

Who is the main decision-makers? How does the community feel being represented by such key people? How accurately represented do they feel by these person/persons in power? | (Indicators of (Social) Power)

Primary, Qualitative Data Collection

- Focus Groups
- Interviews

(Process)

Secondary, Qualitative and Quantitative

- Process tracing (Open Data Platform, |

injustices related to colonialism, racism, and state power, leading to environmental injustices as they are played out today" (Svarstad & Benjaminsen, 2020, pg. 6).	• (Social) Power Definition: Concerns "the fairness of how decisions are made and by whom" (Martin et. al., 2015; Ruano-Charmorro, Gurney, & Cinner, 2022, pg. 2), with higher levels of status more likely to be considered "genuine and meaningful forms of participation that can improve decision making and produce more socially acceptable outcomes" (Perlaviciute & Squintani, 2020, pg. 342)	(Process) – How things were done: - Positive/negative changes in TransformTO processes in neighbourhoods of focus (since the beginning of campaign (2017)). Changes in policy, introduced plans and decisions, change of who has power of decision-making etc. Who initiated these changes? By whom were these changes done by? How were these changes brought to fruition?	Census Data Collection, TransformTO updated reports)
Sustainable Transitions Definition: Structural systemic realignment to create fundamental changes to the "urban society, its technologies and infrastructures, urban cultures and lifestyles as well as governance and institutional frameworks" (Frantzeskaki, Castán Broto, Coenen, & Loorbach, 2017, pg. 1). **Socio-Technical Transitions** Definition:	**TransformTO** Definition: City of Toronto's Net Zero Strategy that commits to respond to "the climate emergency by focusing on a new target of net zero GHG emissions community wide by 2040" (City of Toronto, 2020) **Net Zero Plan:** 1. Transit Goals: TransformTO aims to have 30% of registered cars being electric, and for 75% of work/school trips under 5km to be walked, biked or by transit (City of Toronto, 2020)	• Level of innovation within transition strategies How are new strategies introduced to these neighbourhoods, what new strategies of community engagement and equity have been introduced to these neighbourhoods with TransformTO? To compare Reports to participants' responses and experiences. -in their perception, to what extent are these projects in progress, will be completed within the timing of the project (by 2040) and how well they feel that these projects are being worked on (Transit Goals)	(Transit Goals) Primary, Qualitative - Focus Groups - Interviews Secondary, Quantitative - Process tracing (Open Data Platform, Census Data Collection, TransformTO updated reports) (Live Green TO) Primary, Qualitative - Focus Groups - Interviews Secondary, Quantitative - Process tracing (Open Data Platform,

Approaches to identify institutionalized cultures, structures, and practices "as regimes in which transitional change takes place", focusing on specific sectors and geographical areas with an emphasis on "how incumbent routines, powers, interests, discourses, and regulations create path dependencies and how these are challenged by (transformative) social innovations" (Loorbach, Frantzeskaki, & Avelino, 2017, pg. 610)	2. Live Green TO: 70% of residential waste diversion from the City of Toronto's waste management system, promote more sustainable consumption habits in the City of Toronto operations and in Toronto's economy, promote greener living in communities through neighbourhood cleanups, resilience strategies and environmental plans and strategies established and are promoted through incentives for homeowners (City of Toronto, 2020)

3. Better Homes TO: All new homes are to be designed and built to be near zero greenhouse gas emissions, greenhouse gas emissions from existing buildings will be cut in half (from 2008 levels), 50% of community-wide energy will come from renewable or low carbon sources (City of Toronto, 2020)

*These goals collectively are aimed to be achieved by 2040. | (Live Green TO)

(Better Homes TO)

- Spatial analysis of changes to green spaces, amenities, mobility and services within Moss Park and Regent Park. | Census Data Collection, TransformTO updated reports)

(Better Homes TO)

Primary, Qualitative

- Focus Groups
- Interviews
Secondary, Quantitative

- Process tracing (Open Data Platform, Census Data Collection, TransformTO updated reports) |

A.2 Respondents Table

<u>Legend</u>

A- Neighbourhood 1, Moss Park Resident
FA- Neighbourhood 1, Moss Park Focus Group

B- Neighbourhood 2, Regent Park Resident
FB- Neighbourhood 2, Regent Park Focus Group

C- Professional

Respondent #	Respondent Code	Description of Respondent(s)	Source	Duration of Interview
1	A1.	Long term resident of neighbourhood, single parent and immigrant to Canada	Snowball, referred to by previous respondent	45:35
2	A2.	Long term resident of neighbourhood, single parent and immigrant to Canada	Snowball, referred to by previous respondent	53:41
3	B1.	Newer resident, volunteer in community, parent of adult children	Ad, outreach via email sent to engage with organization	48:29
4	B2.	Long term resident of neighbourhood, community leader organizing events, advocating for change and is a voice for the community	Snowball, referred to by contact made in the city prior to research	50:59
5	C1.	Author and volunteer in community, continuing	Previous Contact, outreach via email	48:17
6	C2.	Researcher and volunteer in community, longstanding relationship with	Snowball, referred to by contact made in	29:05

		residents and local organizations.	the city prior to research	
7	C3.	Employee of TransformTO Outreach team, Torontonian, parent, advocate for change	Snowball, referred to by previous respondent	1:12:11
8	C4.	Employee of Non-Profit organization, working within community and with community members	Ad, outreach via email sent to engage with organization	59:04
9	C5.	Employee of Non-Profit organization, working within community and with community members	Ad, outreach email sent to engage with organization	56:13
10	C6.	Employee of TransformTO Project Management Sector, contributing to the plans to decarbonize the city's energy systems. Torontonian, homeowner and avid biker.	Snowball, referred to by previous respondent	59:13
11	C7.	Architect and Co-founder of Non-Profit in neighbourhood. Torontonian, parent and community leader in shifting away from the dependency of	Snowball, referred to by previous respondent	1:02:04

		gas to heat our homes.		
12	C8.	Executive Director of TransformTO. Oversees all sectors involved in the climate action policies set to achieve net zero by 2040.	Snowball, referred to by contact made in the city prior to research	25:03
13	C9.	Director of TransformTO Outreach and Engagement.	Snowball, referred to by previous respondent	***Email Correspondence***
14, 15, 16, 17	FA1 FA2 FA3 FA4	Focus Group for Moss Park. 3 female participants, 1 male, all residents from the neighbourhood living in area for at least 5 years- 40+ years. 3 respondents are Canadian born, 1 is an immigrant. All middle aged, all active individuals in the neighbourhood.	Flyer sent online via email, posted on Neighbourhood association website and monthly email and physical posters put around the neighbourhood.	1:28:35
18, 19, 20, 21, 22	FB1 FB2 FB3 FB4 FB5	Focus Group for Regent Park. 4 female participants, 1 male, all residents from the neighbourhood and have been living in the neighbourhood for at least 8 years. 4 respondents are immigrants to Canada, 1 is Canadian born.	Flyer sent online via email and physical posters put around the neighbourhood. Had key community members to help with getting participants.	1:55:44

		All middle aged, with varied involvement in the community.		

A.3 Focus Group Guide

The following section depicts the questions asked in FA and FB:

ICE BREAKER

To begin, let's go around, each stating your name and reason for partaking in this focus group today.

1) Public Participation (allot 5-10mins)

How do you participate in your community? Why do you choose to participate/not to participate? Is public participation important?

2) Community Engagement
- Engagement (Allot ~10mins)

I open the floor to the group to share your experiences with the city of Toronto and the community engagement experiences you have had concerning climate action policymaking and strategies.

Probe: Do you feel that the city of Toronto has made a conscious effort to involve your neighbourhood in TransformTO?

-Accessibility (Allot ~15mins)

How accessible do you feel the TransformTO information, services and opportunities to become involved are? What are the reasons why you feel that you can or cannot access these services/opportunities and information?

- **Trust (Allot ~15mins)**

Do you trust the TransformTO plan? Why or why not?

What creates trust for you in your community? Do you believe that you have that now?

- **Confirmation and Reassessment (Allot ~5mins)**

Do you feel up-to-date with the city's climate action goals? Are these changes addressed to the community? How does this make you feel?

Probe: What could improve this in the community? What tools do you feel need to be made better or to be introduced for these interactions to occur more often and more transparently?

- **Involvement and Collaboration (Allot ~5mins)**

How would you explain the city's efforts to collaborate with your community regarding TransformTO?

Probe: Do you feel involved in the decision-making processes prompting these changes? Why or why not?

3) Knowledge and Awareness (Allot ~20mins)

What is climate change to you? How are you experiencing climate change? How do you see it in your neighborhood, in your city?

Probe, prompt to continue discussion: From your group members responses, can you identify any similarities or parallels to your individual experiences? What can you take away hearing from each other?

How well do you know and understand TransformTO's targets for Transit, Live Green TO and Better Homes TO? If anyone in the group has personal experience with any of these strategies, please share with the group.

Probe: Were these experiences positive? Negative? Please elaborate.

Has anyone in this group had similar experiences?

4) Social Power (~20mins)

Who is/are the main decision-makers in your community? Do you feel that key decision-makers in your community accurately represent the needs of your neighbourhood? Why or why not? Is this a shared belief or is there conflicting opinions on this? Please discuss.

Probe (if speaking about a community representative that makes the decisions): Do you feel that the city is actively connecting with your community representative? Why or why not?

10 MIN BREAK (Washroom, coffee break) only suggested, if the participants would like to continue without the break, we will continue

5. Process (~20mins)

What changes have you noticed in your neighbourhood over the last 5 years? Please share your experiences regarding changes in policy, changes in political power/decision-making positions, and introduced plans in your neighbourhood.

Probes: Who initiated these changes?
What influenced these changes?
How were these strategies introduced to your neighbourhood?

6. Transit Goals (~10 mins)

How do you travel around the city? What are your opinions on the current public transit in your neighbourhood? If it were to become more accessible to you, would you use it?

What is your opinion on biking in the city? In your neighbourhood?

Have you noticed any changes to the "bike-ability" and accessibility to transit in the past 5 years? Please share your experiences.

7. Live Green TO (~15mins)

What does it mean for a place to be "green"?

<u>Probes:</u> In what ways do you feel that your neighbourhood is improving their greenspaces, use of outdoor space and maintenance to ensure a clean community? Do you think that your neighbourhood is "green"?

8. Better Homes TO (~15mins)

What constitutes as sustainable living conditions and habits?

<u>Probe:</u> Would you consider your current lifestyle sustainable?

Final Question(s):

Do you feel that your neighbourhood is a part of the city's vision to combat climate change?

What is your ideal vision for your neighbourhood? Do you believe that this vision can be achieved?

A.4 Interview Guides

The following section depicts the questions asked for all interviews:

A.4.1 Professionals Interview Guide

Opening Question:

What is TransformTO to you?

*WARM UP QUESTIONS

To begin, I would like to start by getting to know you:

Background Questions

1. Where-abouts do you live in the city of Toronto?

2. What type of household do you have?
   a. Living alone
   b. Living with partner, no kids.
   c. Living with partner and _____ kids
   d. Single parent with _____ kids
   e. Living with _____ housemates
   f. Other, _____

3. Do you own or rent your house?

4. How long have you resided at your current residence?

5. What is your professional title/current occupation?

6. In which country were you born?

7. What age category do you fall within?
   a. 18-25
   b. 26-40
   c. 41-60
   d. 61-75
   e. 75+

Closed Questions

1. How do you find that the city of Toronto is addressing climate change?
   A) I do not know any climate action incentives that the city is involved in.
   B) There is little conversation about climate change, has been mentioned a few times in the office and professional environment
   C) I feel that the city of Toronto is actively involved in climate action.
   D) Other (if other please state):_____

2. How close do you live to green space that you use? (Park, ravine, trail etc.)

A) Can see public greenspace from house
B) Under 5 min walk
C) 10-15min walk
D) 20+ min walk away from (useable) outdoor space

3. On a scale from 1-10, how green do you feel your neighbourhood is?
A) 0-3 (No green at all, very grey and concrete)
B) 4-6 (Little green, mostly on private property)
C) 7-9 (Green, but with little use (Ex. grassy areas between roads and buildings))
D) 10 (Very green, parks, playgrounds and nature accessible throughout my neighbourhood)

4. What is your main form of transportation? (ie. To work, around the city etc.)
A) Public Transportation (TTC, Subway, GO train)
B) Personal Vehicle (Scooter, Motorcycle, car)
C) Walk
D) Bicycle

5. How would you explain your community (social) environment to be?
A) I know almost all my neighbours, feel like it is a very close knit, supportive community.
B) I do not know anyone in my neighbourhood, my circle of friends and family live outside my neighbourhood.
C) There are a few friendly faces in my neighbourhood, though I wouldn't call any of these people close friends or someone I can count on.
D) Other (if other please state): _____

Open Questions (total of 14 questions)

1. Public Participation
How do you participate in TransformTO?

Please explain your level of participation and how you are involved, reasons why you choose to participate (other than employment obligations), and reasons that you feel you can or cannot participate in conversations, meetings, volunteer/work opportunities etc.

Probe: Do you think that it is important to participate? Why or why not?

2. Community Engagement
- **Engagement**

How well do you believe that the city of Toronto is engaging the community to become involved in climate action incentives? (ex. living a more sustainable and "green" lifestyle?)

What methods have you recognized that promotes engagement at the community level? (ie. Townhall meetings, volunteer opportunities, awareness campaigns)

Do you feel that these resources, information, opportunities to be involved are accessible and easy to become involved in? Why or why not?

-Accessibility

How accessible do you feel the city makes TransformTO information, services and opportunities to the community? What are the reasons why you feel that the public can or cannot access these services/opportunities and information?

- **Trust**

Do you trust the TransformTO climate action goals? Are there any policies or goals that you are weary of? Why or why not?

Probe: Do you think that our city can reach these goals by 2040?

- **Confirmation and Reassessment**

How does the city keep the public up-to-date with the climate action goals and progress? How often are updates and information given to the public?

- **Involvement and Collaboration**

How would you explain the city's efforts to collaborate with communities regarding TransformTO?

Is there incentive to involve the public in the decision-making processes prompting these changes? Why or why not?

3. **Knowledge and Awareness**

How well do you understand climate change? In your own words, please explain to me your understanding of what climate change is:

How well do you know and understand TransformTO's targets for Transit, Live Green TO and Better Homes TO?

Probe (If living in Toronto): How do you feel that these goals have affected your neighbourhood, and have affected you personally?

4. **Social Power**

Who is/are the main decision-makers in these sectors? Do you feel that these key people work inter-sectionally to approach like-minded goals?

5. **Process**

What changes have you noticed in Moss Park and Regent Park over the last 5 years? Please speak about experiences regarding changes in policy, changes in political power/decision-making positions, and introduced plans in these neighbourhood.

Who initiated these changes?

What influenced these changes?

How were these strategies introduced to these neighbourhood?

6. Transit Goals
Have you noticed any changes to the transit (ex. bike lanes, transit stops, possible routes to take to and from work etc.) in the Regent Park and Moss Park neighbourhoods in the last 5 years? Do you feel that it has improved? Why or why not?

7. Live Green TO
In what ways do you feel that Toronto is improving greenspaces, use of outdoor space and maintenance to ensure a clean community in Regent Park and Moss Park?

8. Better Homes TO
Has Better Homes TO affected you personally? Have you shifted your overall living habits and housing because of your knowledge and awareness of these goals? Why or why not?

In your personal opinion, do you feel that Better Homes TO has accurately targeted lower income neighbourhoods (including Moss Park and Regent Park)? Do you feel that these targets are financially and socially accessible to these people? Why or why not?

Final Question(s):

Do you feel that Moss Park and Regent Park are a part of the city's vision to combat climate change?

What is your ideal vision for the city? Do you believe that this vision can be achieved?

FINALLY: if you could refer me to anyone else interested in partaking in my study, please send them my way! I am continually interviewing for the month of May and June and would appreciate any contacts you could share with me.

A.5 Surveys

A.5.1 Introductory Survey

Created on SurveyMonkey.com, images are downloaded webpages.

Focus Group Introduction Survey

Introductory Questions Prior to Focus Group with Siena Turnbull

Please fill out the following questions prior to the focus group meeting. I look forward to speaking with you all then!

1. Whereabouts do you live in the city of Toronto?

2. What type of household do you have?

- ○ Living alone
- ○ Living with partner, No kids
- ○ Living with partner and children
- ○ Single parent with children
- ○ Living with Housemates
- ○ Other (please specify)

3. Do you own or rent your house?

- ○ Own
- ○ Rent
- ○ Other (please specify)

4. How long have you resided at your current residence?

5. Are you working? If yes, please state your occupation:

6. Which country were you born in?

7. What age category do you fall within?

- ○ 18-25
- ○ 26-40
- ○ 41-60
- ○ 61-75
- ○ 75+

8. What is your main form of transportation?

- ○ Public Transport (TTC, Subway, GO train)
- ○ Personal Vehicle (Car, Motorcycle, Scooter)
- ○ Walk
- ○ Bicycle

A.5.2 Voluntary Follow-up Survey

Created on SurveyMonkey.com, images are downloaded webpages.

Post Focus Group

Feedback Survey

Thank you so much for participating in the focus group! It was amazing speaking with you all, your thoughts and contribution have been incredibly helpful for my research to complete my master's thesis.
Please fill out this survey to provide me with feedback after the focus group. :)
Thank you in advance!

1. After the focus group, did you learn anything new?

  Yes

  No

2. Did you feel that you were able to fully participate and speak freely throughout the call?

  Yes

  No

  Other (please specify)

3. Are you still in support with the opinions of the group regarding the topic of conversation?

  Agree

  Disagree

  If disagree, please state why:

4. Did you find this focus group engaging?

  Extremely engaging

  Very engaging

  Somewhat engaging

  Not so engaging

  Not at all engaged

5. Following question 4., please explain your choice:

6. If there is anything that you could have added to the conversation in the focus group, what would that be?

7. Would you participate in another focus group?

  Definitely would

  Probably would

  Probably would not

  Definitely would not

A.6 Atlas.ti Codes

Code #	Code Name	Indicator Measured	# of Codes in Responses
1	Public Participation	Public Participation	74
2	Mention of Government	Public Participation	47
3	Mention of Private Sector	Public Participation	34
4	Accessibility	Community Engagement	91
5	Confirmation and Reassessment	Community Engagement	51
6	Engagement	Community Engagement	140
7	Involvement and Collaboration	Community Engagement	88
8	No Community Engagement	Community Engagement	81
9	Trust	Community Engagement	132
10	Knowledge and Awareness	Knowledge, Awareness and Understanding	71
11	Lack of Knowledge	Knowledge, Awareness and Understanding	33
12	Process	Process (time)	76
13	Equity	Process / Social Power	16
14	Future Vision	Process	65
15	Social Power	Social Power	65
16	TransformTO Goals in Neighbourhood	Socio-Technical Transitions: TransformTO Net Zero Strategy	13
17	TransformTO: Transit Goals	Socio-Technical Transitions: TransformTO Net Zero Strategy	42
18	TransformTO: Live GreenTO	Socio-Technical Transitions: TransformTO Net Zero Strategy	30
19	TransformTO: Better Homes TO	Socio-Technical Transitions: TransformTO Net Zero Strategy	27

Appendix B: IHS copyright form

In order to allow the IHS Research Committee to select and publish the best UMD theses, students need to sign and hand in this copyright form to the course bureau together with their final thesis.

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Date   :   July 13th, 2023

Your Name(s)   : Siena Turnbull

Your Signature(s)   :

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