

A Compromise of Values, Privacy, and Protection: Exploring Sidewalk
Toronto's Failure to Launch Through the Lenses of Energy Justice, Privacy,
and Data

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ABSTRACT:

Energy justice is a renewable energy transition theory that encourages participation of marginalized communities in energy decision-making processes. Energy justice recognizes that non-renewable energy systems unfairly place the burden of pollution and environmental degradation on the surrounding communities. The allocation of these energy system burdens is not accidental and often targets racial, low-income, Indigenous, and other types of marginalized communities. There is a need for data and personal information in order to identify instances of energy injustice. Generally, intellectual property law governs privacy and data. Sidewalk Toronto promised to be a new, inclusive, affordable, climate positive development. Yet, the many privacy and data concerns that this project raised over its short span led it to be unfeasible. The vague terms, ineffective public consultation, and the ever expanding scope of Sidewalk Toronto were key features that accounted for its failure. Additionally, the privacy legislation in Canada is out of date and no longer adequately protects consumers in Canada. Energy justice depends on strong privacy protection of the same marginalized communities already burdened by energy systems. This paper offers remedies that could be applied to similar future smart-city proposals.

FOREWORD:

When I began the MES program I was passionate about climate change and looking for a justice-based solution. At that time, I naively did not expect Canada to contribute so much to climate change or experience a lot of environmental degradation. As such the first iterations of my Plan of Study intended to focus on ‘real bad polluters’ like China and Poland. I chose China because of the massive scale of industrial activity and resulting pollution. I chose Poland at that time because I myself am Polish and I was concerned about the almost religious reliance on coal. However, after enrolling in Professor Scott’s Environmental Justice course (ENVS 5061), I finally found the lens that I needed. This course put me in a position to meaningfully reflect on Canada’s role in contributing to climate change and introduced me to some of the justice-based approaches that exist. My final paper for this course discussed the ongoing water crisis impacting Shoal Lake 40 and other Indigenous communities across Canada. This paper was my first application of a justice-based approach to Canada’s environmental struggles. Over the course of my time in the MES/JD program, I worked with Earth Law Center, which is non-profit organization seeking to grant bodies of nature legal status akin to a corporation to protect it from destruction and pollution. The internships with Earth Law Center gave me the opportunity to see environmental injustice in action and some of the legal tools to address it. I also got to explore privacy and intellectual property law through Osgoode Hall Law School’s Intellectual Property Law and Technology Intensive, which brought me closer to finalizing this topic. Ultimately, this major research paper personally fulfills my goals in attending the MES program, which was to learn more about justice-based approaches to climate change and energy.

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Section 1: Introduction

The road to my MRP topic is a long and winding path that begins with my parent’s experiences growing up in the Polish People’s Republic. Information was gold under communist led Poland. The government encouraged neighbours to regularly keep tabs on each other and to report “unfriendly” behaviour or sentiments they may have seen or suspected. Those who opposed the state faced the ZOMO, which was an elite arm of the Citizen’s Militia known for their harsh treatment of protesters including imprisonment, violence, and murder.

This political environment led my parents to ingrain me with a healthy skepticism about the role of justice, information, and the power of privacy. I unconsciously carried this skepticism into my first year of the MES program. At that time, I took a course that introduced me to the idea of energy justice. I was immediately drawn to energy justice because it concentrated on the impact of non-renewable energy systems on surrounding communities: it focused on people first. It was while learning about energy justice that I came across an article that vigorously praised the

role of smart grids in energy systems.¹ There was minimal acknowledgement about any potential invasion of privacy or even the role privacy legislation plays on these types of information-driven energy solutions.

In this moment I began to unpack the skepticism my parents instilled within me and reflected on why I felt so strongly about privacy and data. Ultimately, this internal debate influenced me to focus on intellectual property law in the J.D. portion of my degree. Generally, privacy law and privacy concerns tend to fall under the intellectual property law category. However, I was still missing the central focus of my MRP.

Sidewalk Toronto was a project that I briefly wrote about in my Land Use Planning Law course but was interrupted by the York University Strike in 2018 before I could delve deeper into what this development meant. Thankfully, my advisor and supervisor Dr. Dayna Scott shared two pivotal articles with me written by Dr. Teresa Scassa one of which focused on privacy concerns arising in the Sidewalk Toronto project. These two articles were the missing ingredients to my MRP.

The prophesized low-carbon transition is here, perhaps sooner than it was due to arrive, but the ongoing and escalating climate crisis requires it. As this low-carbon transition unfolds, energy justice ought to take center stage. The purpose of a low-carbon transition is to reduce the rate of carbon emissions, which will then slow the progression of climate change.² However, a low-carbon transition that simply reinforces the same power dynamics and structures that produced unjust conditions, including concentrated environmental degradation, destruction and

¹ See Peter Palensky & Friederick Kupzog, “Smart Grids” (2013) 38 Annual Rev of Environment and Resources 201.

² See Ramanditya Wimbardana Wimbadi & Riyanti Djalante, “From decarbonization to low carbon development and transition: A systematic literature review of the conceptualization of moving toward net-zero carbon dioxide emission (1995–2019)” (2020) 256 Journal of Cleaner Production 120307.

inequality, will not be a true success. For this reason, a successful low-carbon transition will be a just transition and therefore, must integrate justice into its operation.

Energy justice (“EJ”) comprises one conception of a just transition, and while there are many definitions, EJ generally aims to apply “human rights across the energy life-cycle (from cradle to grave)”.³ Energy is necessary for wellbeing, economic development and can alleviate poverty⁴; further, the demand for energy only continues to grow⁵ and especially during the COVID-19 Pandemic.⁶ Therefore, EJ can be applied globally and it can be used to guide positive changes away from non-renewable energy production anywhere. But EJ can also be applied more narrowly to a local context as well. EJ’s widespread application potential is significant because it can address an energy system in any stage of a low-carbon transition. The principles of EJ can act as a justice infused low-carbon transition catalyst for an energy production system that primarily depends on non-renewable energy sources; alternatively, they could guide a low-carbon transition that is already underway but lacking justice. However, central to achieving EJ is a dire need for massive amounts of data and data collection.

Data is integral to any research but especially EJ research. Energy injustice will impact communities differently based on several factors including race, gender, socio-economic status, and physical location. EJ research relies on data that collects information about wide ranging

³ Raphael J. Heffron & Darren McCauley, “What is the ‘Just Transition’?” (2018) 88 *Geoforum* 74.

⁴ See Hannah Ritchie & Max Roser, “Energy” (2020), online: *Our World In Data* <<https://ourworldindata.org/energy>>

⁵ *Ibid.* See also, BP, “BP Energy Outlook 2019” (14 February 2019), online: *BP* <<https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-energy-outlook-2019.html>>; International Energy Agency, “World Energy Outlook 2018” (November 2018), online: *IEA* <<https://www.iea.org/reports/world-energy-outlook-2018>>; Bas van Ruijven, Enrica De Cian & Ian Sue Wing, “Amplification of Future Energy Demand Growth Due to Climate Change” (2019) 10 *Nature Communications* 2762.

⁶ See Ali Cheshmehzangi, “COVID-19 and household energy implications: what are the main impacts on energy use?” (2020) 6:10 *Heliyon* p.e05202-e05202.

demographic factors such as age, sex, income level, race, and education level among many others.⁷ These are factors can be used to identify instances of energy injustice and ultimately, reveal an individual's vulnerability within the energy system.⁸ Data collection already occurs on an unimaginable scale in a modern life,⁹ and it is impossible to escape, particularly in metropolitan areas.¹⁰ However, the ongoing and increasing value of data raises many legal and ethical questions regarding ownership, how the collection of data is conducted, as well as how data is stored, governed, managed, and protected. These concerns are doubly amplified in the context of EJ research where the subjects of data collection are often vulnerable and may also not be aware of the extent of the information that is collected about their situation.

The intersection of EJ and data is inevitable and crucial as data justice continues to garner critical interest and public scrutiny within our society. This paper will focus on this intersection through an examination of the proposed Sidewalk Labs project in Toronto. Specifically, I examine how the Sidewalk Toronto project could have addressed and integrated energy justice principles through its innovative scale of data collection and ultimately, why this project failed. The overarching aim of this paper is thus to understand how to optimize ethical data collection and use in the EJ context to avoid failures like the Sidewalk Toronto project. The organization of

⁷ Tony Reames, "A community-based approach to low-income residential energy efficiency participation barriers" (2016) 21:12 *Local Environment* 1449.

⁸ *Ibid.* See also Benjamin Sovacool & Michael H. Dworkin, "Energy justice: conceptual insights and practical applications" (2015) 142 *Applied Energy* 435; Kacper Szulecki, "Conceptualizing energy democracy" (2018) 27 *Environmental Politics* 21.

⁹ See Dan Ciuriak & Maria Ptashkina, "Toward a Robust Architecture for the Regulation of Data and Digital Trade" (15 April 2020), online: *Centre for International Governance Innovation* <<https://www.cigionline.org/publications/toward-robust-architecture-regulation-data-and-digital-trade>>.

¹⁰ See Teresa Scassa & Merlynda Vilain, "Governing Smart Data in the Public Interest: Lessons from Ontario's Smart Metering Entity" (10 July 2019), online (pdf): *Centre for International Governance Innovation* <<https://www.cigionline.org/publications/governing-smart-data-public-interest-lessons-ontarios-smart-metering-entity>>. See also Teresa Scassa, "As Smart Cities Become Our Norm, We Must Be Smart About a Data Strategy" (15 February 2019), online: *Centre for International Governance Innovation* <<https://www.cigionline.org/articles/smart-cities-become-our-norm-we-must-be-smart-about-data-strategy>>.

this paper is as follows: first, a section on methodology; second, a literature review section on energy justice, data, and intellectual property law literature to establish clarity in the terms and definitions used in this paper. The third section will be devoted to the Sidewalk Toronto case study and analysis. The fourth and concluding section will focus on any lingering questions, and how to answer those questions to move forward towards energy justice.

Section 2: Methodology

I will analyze the Sidewalk Labs project that failed to launch in Toronto. The official reason given by Sidewalk Labs was economic uncertainty and the volatility in Toronto's real estate market brought on by the COVID-19 pandemic.¹¹ However, as the pandemic continues, the real estate market in Toronto has not slowed down,¹² nor shown any signs of slowing down¹³. Instead, it is likely that the intense public opposition to this project and complicated legislative landscape proved to be significant barriers to completing this project.¹⁴

Sidewalk Labs presented the Sidewalk Toronto project as an inclusive, affordable, and environmentally sustainable land development initiative. This collaborative project between the City of Toronto, Waterfront Toronto and Sidewalk Labs was going to develop the eastern waterfront area of Toronto, which is currently inconsistently underutilized as industrial use

¹¹ Daniel Doctoroff, "Why we're no longer pursuing the Quayside project — and what's next for Sidewalk Labs" (7 May 2020), online: Medium <<https://medium.com/sidewalk-talk/why-were-no-longer-pursuing-the-quayside-project-and-what-s-next-for-sidewalk-labs-9a61de3fee3a>>.

¹² Sean Leathong, "Toronto-area real estate market just had its biggest September ever" (6 October 2020), online: CTV News <<https://toronto.ctvnews.ca/toronto-area-real-estate-market-just-had-its-biggest-september-ever-1.5134242>>.

¹³ Tess Kalinowski, "Toronto housing prices hit new record with detached homes averaging \$1.2 million — but downtown condos bucked the trend" (4 November 2020), online: The Toronto Star <<https://www.thestar.com/business/2020/11/04/toronto-housing-market-defies-covid-19-in-prices-sales.html>>.

¹⁴ Tara Deschamps, "Waterfront Toronto committee weighs in on 160 Sidewalk Labs ideas" (18 February 2020), online: *The Toronto Star* <<https://www.thestar.com/business/2020/02/18/evaluation-committee-rejects-10-of-sidewalk-labs-proposals-supports-remainder.html>>.

space.¹⁵ Sidewalk Labs proposed that this project would have built housing, commercial buildings, and other structures to create a space that included a significant public use component, which was to include parks and waterfront activities.¹⁶ The company introduced this innovative neighborhood development as a means of integrating accessible design into all facets of this new community space.¹⁷ This project intended to achieve environmental sustainability by incorporating energy-efficient building designs, digitalized energy waste management, a district energy system, and an advanced power grid.¹⁸ Further, the innovation that this neighborhood would have introduced included, open digital infrastructure, clear and publicly accessible data, as well as a data-use governance framework, and digital services that would enable the neighborhood to function in its data collection.¹⁹ Sidewalk Labs emphasized that this waterfront smart city development was meant to serve as a blueprint that could be replicated in other cities.²⁰

In this paper I examine the goals of this project, the means of achieving those goals, the relevant legislative framework for this project (at federal, provincial and municipal levels), the key actors involved in this project, as well as the public's response to this project, with a focus on the energy justice, data and privacy dimensions. I examine information about these different sections from publicly available information such as municipal planning documents, government legislation, Sidewalk Lab's available documents, as well as news reports. As part of this analysis, I also examine the language of applicable legislation to establish the limits of privacy rights and

¹⁵ Sidewalk Toronto, "Introduction to the IDEA District" online: Sidewalk Toronto <<https://www.sidewalktoronto.ca/plans/introduction-to-the-idea-district>>.

¹⁶ Sidewalk Toronto, "Master Innovation and Development Plan Volume 1" (2019) online (pdf): Sidewalk Toronto <https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/23135619/MIDP_Volume1.pdf>.

¹⁷ Sidewalk Toronto *supra* note 15.

¹⁸ *Ibid.*

¹⁹ *Ibid.*

²⁰ Sidewalk Toronto *supra* note 16.

data collection and sharing capacity to demonstrate how the data governance structure proposed failed. My analysis aims to determine whether this project had the capacity to create a practical approach to preventing energy injustice through the extensive collection of data about potential inhabitants. I rely on energy justice literature and compare it with the project proposal to assess whether this neighborhood could have acted as a tool for monitoring and achieving energy justice. Additionally, I rely on data governance frameworks in the literature to investigate why this innovative neighborhood failed, whether it was due to unclear data governance structure or poor communication with the public, or other reasons.

To assess whether Sidewalk Toronto could have achieved energy justice goals I rely on the following evaluative criteria which are informed by Benjamin Sovacool's principles of energy justice:²¹ affordability, due process, inclusivity, transparency and accountability, sustainability, commitment to renewable energy production, energy efficiency, degree of community participation in decision making processes, efficacy and transparency of public consultation.

The evaluative criteria I use in evaluating Sidewalk Labs' approach to data collection, privacy protection and the applicable legislation is a rights-based approach, as advocated by the Privacy Commissioner of Canada.²² This evaluative criterion emphasizes the importance of protecting personal information, recognizing the potential for injury to an individual's privacy, and rejects the lax approach to privacy protection presently in place. This approach favours

²¹ Benjamin Sovacool et al., "New frontiers and conceptual frameworks for energy justice" (2017) 105 Energy Policy 677.

²² Office of the Privacy Commissioner of Canada, "Privacy Law Reform - A Pathway to Respecting Rights and Restoring Trust in Government and the Digital Economy: 2018-2019 Annual Report to Parliament on the Privacy Act and the Personal Information Protection and Electronic Documents Act" (10 December 2019), online: *Office of the Privacy Commissioner of Canada* <https://www.priv.gc.ca/en/opc-actions-and-decisions/ar_index/201819/ar_201819>.

strong protection for personal information and privacy much like the European Union's General Data Protection Regulations ("GDPR").

I entered this work with the hypothesis that the Sidewalk Labs example will demonstrate that energy justice cannot be achieved without strong and sustainable data governance, in the end I conclude that this is true. Sidewalk Labs failed to launch in Toronto because the smart city model they proposed did not adequately address the level of privacy protection raised by community members. Additionally, there appears to be a disconnect between present privacy legislation standards and the level of privacy protection that the public desires. Until governments address this discrepancy future smart city proposals will face similar obstacles and eventual rejection by the public.

Section 3: Literature Review

Section 3.1: What is Energy Justice

Energy justice is defined as “a global energy system that fairly distributes both the benefits and burdens of energy services, and one that contributes to more representative and inclusive energy decision-making”.²³ Energy justice seeks to apply principles of justice to “energy policy, energy production and systems, energy consumption, energy activism, energy security, the energy trilemma, political economy of energy, and climate change”.²⁴ I adopt the energy system definition put forth by McCauley et al., which narrows it down to the “interconnected processes of generation and consumption.”²⁵ Generally, energy justice literature focuses on vulnerabilities within the energy system²⁶ and establishes the criteria that results in

²³ *Ibid.*

²⁴ Kirsten Jenkins et al., “Energy justice: A conceptual review” (2016) 11 Energy Research & Social Science 174.

²⁵ Darren McCauley et al., “Energy justice in the transition to low carbon energy systems: Exploring key themes in interdisciplinary research” (2019) 233-234 Applied Energy 916.

²⁶ Reames *supra* note 7.

these vulnerabilities, such as access or affordability.²⁷ Energy justice is concerned with preventing infringement of basic civil liberties and ensuring that community members are informed and meaningfully represented in energy related decisions regarding their rights.²⁸ Energy justice aims to both establish and protect an individual's right to access energy services.²⁹ Accessibility to renewable energy for vulnerable groups should be policy priorities. By accessibility I mean, equal and fair opportunity to obtain energy without experiencing socio-economic harm, such as inability to afford energy. Environmental and social realities impact this right.

The earliest energy justice definition emerged from energy policy literature.³⁰ This initial energy justice definition focused on applying basic principles of justice to individuals who lived without "life sustainable energy".³¹ Guruswamy categorized those individuals living without adequate energy as the "energy oppressed poor ("EOP")".³² Guruswamy also made the connection that energy justice is integral to the notion of sustainable development.³³ Essential to Guruswamy's energy justice definition was the lack of distributional justice in energy resources.³⁴

²⁷ Stefan Bouzarovski & Neil Simcock, "Spatializing Energy Justice" (2017) 107 Energy Policy 640.

²⁸ Benjamin K. Sovacool & Michael H. Dworkin, *Global Energy Justice: Problems, Principles, & Practices* (Cambridge University Press, 2014).

²⁹ *Ibid.*

³⁰ Giuseppe Pellegrini-Masini, Alberto Pirno & Stefano Maran, "Energy justice revisited: A critical review on the philosophical and political origins of equality" (2020) 59 Energy Research & Social Science 101310.

³¹ Lakshman Guruswamy, "Energy justice and sustainable development" (2010) 21 Colo J of Intl Envtl L & Pol'y 231.

³² *Ibid.*

³³ *Ibid.*; Pellegrini-Masini *supra* note 30

³⁴ Pellegrini-Masini *supra* note 30.

Some scholars have emphasized that energy justice adopts an anthropocentric bias.³⁵ According to this view, energy justice is concerned with justice among members of society,³⁶ and especially “fairness among people and communities”.³⁷ The anthropocentric view of energy justice only considers the needs and vulnerabilities of humans.³⁸ There is no significant consideration of other animal species in energy justice literature. Others have suggested that energy justice is based on three tenets of justice: distributional justice, procedural justice, and recognition justice.³⁹ This definition of energy justice centers on providing all individuals with “safe, affordable and sustainable energy”.⁴⁰

Some scholars conceptualize energy justice as an analytical tool that helps researchers and other key energy field actors understand how certain values become ingrained into energy systems.⁴¹ In trying to establish an energy justice definition, most of this literature incorporates philosophical⁴² and cultural studies^{43,44} concepts and schools of thought. Specifically, John Rawls’ philosophy features prominently in this literature.⁴⁵

My position is that energy justice should be a policy priority in Canada for two reasons: first, the composition of the current energy system is built upon injustice and it perpetuates unsustainable practices; second, energy justice is required to guide the ongoing transition to

³⁵ Sovacool et al. *supra* note 21.

³⁶ Darren McCauley et al., “Advancing energy justice; the triumvirate of tenets and systems thinking” (2013) 32 *International Energy L Rev* 107.

³⁷ Sovacool et al. *supra* note 21; Sovacool & Dworkin *supra* note 8.

³⁸ Jenkins *supra* note 24.

³⁹ McCauley *supra* note 36.

⁴⁰ *Ibid.*

⁴¹ Sovacool et al. *supra* note 21.

⁴² Sovacool & Dworkin *supra* note 28.

⁴³ Gordon Walker, *Environmental Justice: Concepts, Evidence, and Politics* (New York: Routledge Publishing, 2012).

⁴⁴ Jenkins et al. *supra* note 24.

⁴⁵ Sovacool & Dworkin *supra* note at 28.

renewable energy systems by prioritizing the rights of communities that were previously locked-in by non-renewable energy systems. The burdens and benefits of energy production systems are inequitably distributed, wherein marginalized communities disproportionately bear the burden of an energy system.⁴⁶ For instance, burdens such as air, water, and soil pollution, negative impacts on the physical health of community members, environmental degradation and destruction are examples of some of the broader burdens that energy justice aims to prevent in a renewable energy transition.⁴⁷ Energy insecurity in the form of fuel shortages, supply issues due to energy infrastructure failure, and power outages are other symptoms of energy injustice in the present energy system.⁴⁸

Examples of energy injustice are typically concentrated in “sacrifice zones”.⁴⁹ Sacrifice zones are areas in the vicinity of energy production sites, where surrounding communities suffer “environmental health consequences [from] living downwind and downstream from [such] major pollution hotspots”.⁵⁰ Socio-economic status, household income, race, exposure to environmental hazards (related to energy systems), level of education, gender, housing tenure, housing type, energy efficiency and age of housing are critical factors in identifying communities that experience energy injustice in the current system.⁵¹ Further, even though explicit racial segregation and racist zoning by-laws are a thing of the recent past, their effects persist in the

⁴⁶ Jenkins et al. *supra* note 24.

⁴⁷ *Ibid.*

⁴⁸ Gordon Walker & Rosie Day, “Fuel poverty as injustice: integrating distribution, recognition and procedure in the struggle for affordable warmth” (2012) 49 *Energy Policy* 69.

⁴⁹ Dayna N Scott & Adrian A Smith, “Transforming relations in the green energy economy: control of lands and livelihoods” in Raya Salter, Carmen G Gonzalez & Elizabeth A Kronk Warner, eds, *Energy Justice: US and International Perspectives*, (Northampton: Edward Elgar Publishing, Inc., 2018) 208.

⁵⁰ *Ibid* at 208.

⁵¹ Sonal Jessel, Samantha Sawyer & Dianara Hernández, “Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature” (2019) 7 *Frontier in Public Health* 357; Reames *supra* note 7; Stefan Bouzarovski & Sergio Tirado Herrero, “Geographies of injustice: the socio-spatial determinants of energy poverty in Poland, the Czech Republic and Hungary” (2016) 29:1 *Post-Communist Economies* 27.

location of racialized communities today.⁵² In turn, these patterns continue to concentrate the effects of energy injustice. Tony Reames gives examples of the types of factors that help in identifying energy injustice.⁵³ Reames demonstrates that socio-economic factors like home ownership will impact how energy benefits are distributed.⁵⁴ Community-government relationships is another important factor in energy justice because it illustrates a multi-faceted obstacle to achieving energy justice. Further, low-income and high energy costs result in an affordability gap wherein, communities may struggle to afford their energy bills.⁵⁵ This affordability gap coupled with the notion of “sacrifice zones” quickly reveals regions where energy justice issues may exist.

Section 3.2: Evaluating Energy Justice

There are several ways of evaluating energy justice. Perhaps the first consideration in an evaluation of energy justice is jurisdiction. Jenkins et al. acknowledges the role that regional differences may have on evaluating EJ.⁵⁶ The policy of one jurisdiction will determine several key energy justice criteria as well as the present policy obstacles to achieving energy justice.

Jenkins et al. also notes that the most common energy justice framework will use some variation of the three-tenet approach which comprises of distributional justice, recognition-based justice, and procedural justice.⁵⁷ This three-tenet approach seeks to evaluate the location of

⁵² Richard Rothstein, *The Colour of Law: A Forgotten History of How Our Government Segregated America* (New York: Liveright Publishing Corporation, 2017).

⁵³ Reames *supra* note 7.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ Kirsten Jenkins et al., “Synthesizing value sensitive design, responsible research and innovation, and energy justice: A conceptual review” (2020) 69:5 Energy Research & Social Science 101727.

⁵⁷ *Ibid.* See also McCauley et al., *supra* note 36.

where energy injustice occurs, which communities are impacted by energy injustice and what remedies or processes exist to reduce and ultimately eliminate such energy injustice.⁵⁸

Sovacool and Dworkin outline the following key elements of energy justice:⁵⁹

1. Costs and how burdens are distributed. What benefits are offered for what costs? What harms are endured for what costs? Often poor and marginalized communities are exploited and receive little benefit for inequitable cost.⁶⁰
2. Benefits: how the energy systems currently in place (which primarily rely on non-renewable energy production) distribute benefits among different socio-economic communities.
3. Procedures: much of the decision-making around energy systems is exclusive and not participatory for communities that are impacted by the result of such decisions.

Further, Sovacool et al. chose ten principles that they believe identifies the concept of energy justice.⁶¹ These ten principles are:

1. Availability
2. Affordability
3. Due process
4. Transparency and accountability
5. Sustainability
6. Intragenerational equity
7. Intergenerational equity

⁵⁸ *Ibid.*

⁵⁹ Sovacool & Dworkin *supra* note 8.

⁶⁰ Sovacool & Dworkin *supra* note 28.

⁶¹ Sovacool et al. *supra* note 21.

8. Responsibility
9. Resistance
10. Intersectionality⁶²

These ten factors are flexible and broad enough to be applicable in different regions where energy injustice is occurring, without encountering the issue of jurisdiction. Jenkins et al. acknowledges the role that regional differences may have on evaluating EJ.⁶³ The policy of one jurisdiction will not provide the same benefits if applied in a different context. For instance, policy promoting the use of solar energy will be less effective in regions further North with less sunshine and decreased ease of access to photovoltaic equipment.

Section 3.3: IP law and data governance review: Key IP Law Doctrines Relevant to a Renewable Energy Transition

Intellectual property law refers to the governance of “all creations of the human mind”.⁶⁴ A fundamental premise of the intellectual property law definition is the notion that “ideas are free as the air – a common resource for all to use as they can and wish”.⁶⁵ Intellectual property refers to patents, copyright, trademarks, trade secrets, industrial design rights, and plant varieties. Much like other types of property, the owners of intellectual property assets may use their asset as they wish and no one else may infringe upon this right by using the asset without the owner’s consent.⁶⁶ Owners of intellectual property assets may seek protection of their asset domestically and internationally. There are several significant treaties that aim to uniformly protect

⁶² *Ibid.*

⁶³ Jenkins et al. *supra* note 56.

⁶⁴ Barry Sookman, Steven Mason & Carys Craig, Copyright: Cases and Commentary on the Canadian and International Law, 2nd ed (Toronto: Carswell, 2013) at 1-3.

⁶⁵ David Vaver, *Intellectual Property Law: Copyright, Patents, Trade-marks*, 2nd ed (Toronto: Irwin Law, 2011) at 1.

⁶⁶ Sookman *supra* note 64 at 3.

intellectual property assets across different jurisdictions and legal systems. One purpose of such agreements is to prevent discrimination against foreign products and owners.⁶⁷ However, these treaties do not supersede Canadian law, nor are they obligatory.⁶⁸ However, these treaties have influenced some legislative developments within Canada. For instance, the Agreement on Trade-Related Aspects of Intellectual Property Rights (“TRIPS”) indirectly influenced the patent protection term within Canada.⁶⁹ Specifically in *Pfizer Inc. v Canada*, Pfizer Inc. argued that the Canadian Federal Court should impose a twenty-year patent protection term as mandated by the TRIPS agreement, as opposed to the seventeen-year protection that was offered at the time by Canada’s *Patent Act*.⁷⁰ The plaintiff argued that Parliament had legislated the TRIPS agreement into domestic law by passing the *World Trade Organization Implementation Act* in 1994.⁷¹ The court rejected this argument and concluded that the seventeen-year patent protection term would remain unchanged. However, following a complaint by the European Union, the World Trade Organization (“WTO”) criticized Canada for breaching its commitments under the TRIPS agreement.⁷² Following these developments the *Patent Act* was amended to reflect a twenty-year protection period, finally conforming to the TRIPS agreement. Accordingly, courts rely on international intellectual property law treaties as “aids to interpretation on the safe assumption that Canada intends fully to implement any treaty it ratifies”.⁷³

⁶⁷ Vaver *supra* note 65 at 27.

⁶⁸ *Ibid.*

⁶⁹ *Ibid*; *Pfizer Inc. v Canada*, [1999] 4 FC 441, 2 CPR [Pfizer]; Council of Canadians v Canada (Attorney General), (2006) 217 O.A.C. 315 at para 25 277 DLR (4th) 527 [Council of Canadians].

⁷⁰ *Ibid.*

⁷¹ *Pfizer supra* note 69 at para 9.

⁷² Vaver *supra* note 65 at 27; WTO, Trade Panel, *Canada-Patent Protection of Pharmaceutical Products* WTO Doc WT/DS114/R (2000), online (pdf): WTO < https://www.wto.org/english/tratop_e/dispu_e/7428d.pdf >

⁷³ Vaver *supra* note 65 at 27.

Ultimately, intellectual property law seeks to reward the labour, time, and inventiveness devoted to creating a work by granting a monopoly; patents, copyright, and trademarks achieve this end by slightly different means. Protecting and rewarding the labour, effort, and time that is dedicated to intellectual pursuits encourages others to pursue similar ends. The intellectual property law doctrines that are relevant to a renewable energy transition, particularly a transition that is centered around energy justice, are primarily within the realm of patent and copyright law. Copyright law is the more relevant concern that arises in the context of my case study due to the implications copyright law has on databases specifically, the protection of expression and *not of ideas*.

Section 3.3.1: Patent Law

Patent law intersects with the renewable energy transition in the technological innovations that improve energy production and energy efficiency. There are two main purposes of the patent scheme. First, patents are meant to encourage innovation by rewarding the effort and skill that an inventor committed to their creation. Second, patents provide information to the public about recent innovations, which allows the public to experiment and build on the advancement within the patent. The term of protection granted by a patent is twenty years from the date of filing the application.⁷⁴ Patent registration is necessary for protecting innovation and inventions from becoming widely adopted by others. Patent protection is especially necessary to prevent competitors from exploiting the first-mover advantage. The first-mover advantage is a company's capacity to succeed within a sector by being the first to introduce a new product within that sector.⁷⁵ Critical to this definition is the company's ability to succeed against other

⁷⁴ *Ibid*; *Patent Act*, RSC 1985, c P-4, s 44 [*Patent Act*].

⁷⁵ Fernando F Suarez & Gianvito Lanzolla, "The Half-Truth of First-Mover Advantage" (April 2005), online: *Harvard Business Review* < <https://hbr.org/2005/04/the-half-truth-of-first-mover-advantage>>.

competitors within the same sector. Therefore, patents help safeguard the first-mover advantage and prevent competitors from exploiting the time, labour, resources, and financial investments that the patent owners have devoted to their invention or innovation. When the patent term expires, the invention protected by that patent joins the public domain and the public may use that invention as they wish.⁷⁶ Vaver emphasizes an important difference between the patent and copyright regimes, which is the full and absolute monopoly that a patent grants its owner.⁷⁷ For instance, “nobody may make or exploit the patented invention, even if she arrives at it independently, has never heard of the earlier inventor or patent, and does not mean to infringe”.⁷⁸

Patents may be awarded for “new machines, products, processes, and improvements to existing technologies or knowledge”.⁷⁹ The Patent Office grants patents that meet patentability requirements that are present in the *Patent Act*. The requirements for patentability are novelty and non-obviousness. The novelty requirement is codified in sections 2 and 28.2(1). Section 2 integrates the term “new” in the definition of invention, whereas section 28.2(1) delves deeper into what the novelty requirement actually entails. For instance, novelty requires that a patent application in Canada “must not have been disclosed (a) more than one year before the filing date by the applicant...in such a manner that subject-matter became available to the public in Canada or elsewhere”.⁸⁰ The non-obviousness requirement is codified in section 28.3 and

⁷⁶ Vaver *supra* note 65 at 271.

⁷⁷ *Ibid.*

⁷⁸ *Ibid*; *Patent Act supra* note 74 at s 42; *Monsanto Canada Inc. v Schmeiser*, 2004 SCC 34 at paras 49-50, 239 DLR (4th) 271 [*Monsanto*].

⁷⁹ Vaver *supra* note 65 at 270.

⁸⁰ *Patent Act supra* note 74 at s 28.2(1)(a).

necessitates that the subject-matter of a patent application “not have been obvious on the claim date to a person skilled in the art or science to which it pertains”.⁸¹

Additionally, the intersection of intellectual property law and energy justice raises a lesser concern: patents and their impact on innovation. After investing significant resources into researching and developing (“R & D”) a renewable energy patent, commercialization becomes the next milestone for patent holders.⁸² Yet, commercialization will require recouping the costs of R & D and make the innovation behind the patent too expensive and ultimately, inaccessible. Sovacool and Cepeda & Lippoldt each describe this phenomenon and how patent regimes can limit innovation particularly within the energy sector.⁸³ Accordingly, energy justice research is impossible without collecting, creating and managing data. Ultimately, data ought to play a more significant role within energy justice research.

Importantly, the later Sidewalk Toronto analysis in this paper does not address patent integration into this project. There are a couple of reasons for this omission. First, there is limited mention of patents in the publicly available Sidewalk Toronto documents. Specifically, the only mention of patents in the entirety of the MIDP Volumes occurs in Volume 3, Chapter 2 titled “Innovation and Funding Partnership Proposal.” In this chapter, Sidewalk Labs begins by confirming that “[in] the vast majority of circumstances, the technologies recommended for advancing [Sidewalk Toronto] would be purchased, commissioned, or licenced from existing vendors.”⁸⁴ This stance suggests that Sidewalk Labs would not be engaging in the innovation

⁸¹ *Ibid* at s 28.3.

⁸² Benjamin Sovacool, “Placing A Glove on The Invisible Hand: How Intellectual Property Rights May Impede Innovation in Energy Research And Development (R&D)” (2008) 18:2 Alb L J of Sci & Tech 381.

⁸³ *Ibid*; Ricardo H Cavazos Cepeda & Douglas C Lippoldt, “Has the Strengthening of Patent Rights since 1990 Fueled Energy Efficiency and Innovation?” (2012) 1:9 J of Innovation Econ & Mgmt 13.

⁸⁴ Sidewalk Toronto, “MIDP Volume 3: Chapter 2: Innovation and Funding Partnership Proposal” (15 July 2019), online (pdf): Sidewalk Toronto < https://sidewalk-toronto-ca.storage.googleapis.com/wp-content/uploads/2019/06/23135812/MIDP_Volume3.pdf > at page 121.

solutions required to operate this type of smart-city including developing and registering patents. Instead, Sidewalk Labs would have outsourced innovation and development work to third parties; thus, potentially granting access to personal information at the pre-deidentification stage. This outsourcing stance adopted by Sidewalk Labs is further supported by instances where there would have been an innovative solution missing or not yet devised. In such instances, Sidewalk Labs was “committed to developing it by identifying appropriate technology partners to carry out the work, by integrating and enhancing existing solutions, or by undertaking the research and development itself to create and test the solution for deployment as part of the project.”⁸⁵ In this regard, Sidewalk Lab positions itself as a “platform” that incorporates and benefits from the labour and innovation of others. This raises questions about the relationship between patents and knowledge sharing. Specifically, one main purpose that patents serve is knowledge sharing and promoting innovation. But private entities like Google and its subsidiaries can subvert this purpose when licensing patents to privatize knowledge: in particular, compiling data for commercial and private use. Licensing patents for private commercial use does not inherently subvert the knowledge sharing purpose of the patent scheme. This purpose becomes subverted when there is a privatization of information and knowledge that belongs to the public, which was a significant concern during the brief lifetime of Sidewalk Toronto. For instance, there was a concern that the data collected in Sidewalk Toronto’s Quayside neighbourhood would be used to develop new technologies and patents. Developing new patents based on collected Sidewalk Toronto data would confer significant economic and social benefits for Sidewalk Labs and their private partners, while neglecting Torontonians who would have been the origin of that data.⁸⁶

⁸⁵ *Ibid* at page 121.

⁸⁶ Josh O’Kane, “New Sidewalk deal strikes better balance on IP and innovation but questions still unanswered, experts say” (1 November 2019), online: *The Globe and Mail* <<https://www.theglobeandmail.com/business/article-experts-and-others-weigh-in-on-new-sidewalk-deal/>>.

Sidewalk Labs addresses this concern in two ways: through the introduction of the UDT and when they explicitly promise “never to sell people’s personal information.”⁸⁷ However, it is important to note the difference between personal information and data comprised of deidentified personal information. Despite this statement from Sidewalk Labs, they would have still been able to sell the resulting data created from the collection of personal information. For this reason, Waterfront Toronto renegotiated terms with Sidewalk Labs to create a “public-interest based model of intellectual property generation and protection.”⁸⁸ The public-interest model rejected the initial intellectual property approach adopted by Sidewalk Labs, which would have shared ten percent of profits earned on some technology and did not specify if this would have included new technologies that were derived from the data collected by the project.⁸⁹ Instead, the public-interest model negotiated by Waterfront Toronto achieved a fixed percent (that had yet to be determined) of the technological innovations developed through the data collection occurring in Sidewalk Toronto. Another key component of this renegotiated agreement was the patent-pledge, which would allow Canadians to access Sidewalk Lab patents registered globally.⁹⁰ This patent-pledge had the potential to resolve the issue of privatizing knowledge as Sidewalk Labs “would pledge not to assert Sidewalk Labs’ digital-innovation-related hardware or software patents issued in Canada (“Canadian Patents”) against third parties who develop and sell innovations that utilize such patents...”⁹¹ Unfortunately, a pledge is not legally binding and even though

⁸⁷ Sidewalk Toronto *supra* note 84 at page 122.

⁸⁸ O’Kane *supra* note 86.

⁸⁹ Josh O’Kane, “Intellectual property experts call Sidewalk Labs’ plan to share some profits with Canada ‘unfair’” (26 June 2019), online: *The Globe and Mail* <<https://www.theglobeandmail.com/business/article-experts-say-sidewalk-labs-patent-proposals-dont-go-far-enough/>>.

⁹⁰ O’Kane *supra* note 86.

⁹¹ Sidewalk Toronto *supra* note 84 at page 127.

these new and improved terms offered benefits to Torontonians and taxpayers, intellectual property law expert still criticized the terms themselves for being too vague.⁹²

The second reason for omitting a further discussion of patent integration in this paper is the limited number of patents registered to Sidewalk Labs, which is unsurprising given the outsourcing stance that Sidewalk Labs adopted. After conducting a Canadian patent search for “Sidewalk Labs”, “Sidewalk Toronto” and “Alphabet Inc.” as patent owners, only produced one search results for a patent application registered to Sidewalk Labs LLC.⁹³ This is a patent application that was filed on September 27, 2019 and it relates to the operation of a garbage chute. Notably, this patent application is currently at the “open to public inspection” stage and therefore, has not yet been issued to Sidewalk Labs. A similar search of the American patent registry reveals only three registered patents: two related to the design and operation of garbage chutes and one patent related to a method of paving involving the ability to capture and interpret information from vibrations impacting the paved area.⁹⁴ A further discussion on the role of patents in the Sidewalk Toronto project is not feasible given the sparse number of patents filed by Sidewalk Labs. The outsourcing approach adopted by Sidewalk Labs compounds this issue because there is no access to the patent licensing agreements between Sidewalk Labs and other private entities. The lack of available and publicly accessible patent licensing agreements can be the result of two causes: the early stage of development in building out Sidewalk Toronto; or the nature of contractual negotiations between two private entities. However, if patent licensing agreements had commenced an argument for making these agreements publicly available can

⁹² O’Kane *supra* note 86.

⁹³ “Waste Chute Devices and Methods For Using The Same”, Can Patent No 3056997 application filed on (27 September 2019).

⁹⁴ “Waste Chute Devices and Methods for Using the Same”, US Patent No 10,435,236 B2 (8 October 2019); “Waste Chute Devices and Methods for Using the Same”, US Patent No 10,899,537 B2 (26 January 2021); “Dynamic Paver Device with Vibration Feedback”, US Patent No 10,801,166 B2 (13 October 2020).

readily be made: Sidewalk Labs touted the transparency that they strived to achieve in developing the Sidewalk Toronto project, including transforming the UDT into a quasi-public entity. For instance, Sidewalk Labs promoted open technology standards and wanted to avoid a situation in “[...] technology firms employ closed, siloed systems, which lock out competition and slow down innovation.”⁹⁵

If Sidewalk Toronto had proceeded, there might have been more patent related content to analyze as part of this case study. Instead, the issue of patents and their potential role in the Sidewalk Toronto development is limited and vague, like much of other elements of Sidewalk Toronto.

Section 3.3.2: Copyright Law

Copyright law intersects with a renewable energy transition in the collection, use, and ownership of data. Copyright law protects an author’s work by granting the author “property rights over their creations”.⁹⁶ Presently in Canada, copyright protection lasts the life of the author plus fifty years but may last seventy years in Europe or the United States.⁹⁷ However, this protection term will soon be modified to conform to the life of the author plus an additional seventy years following the author’s death after Canada signed the Protocol of Amendment to the Agreement between the United States of America, the United Mexican States and Canada (“USMCA”). Canada has approximately two and a half years to comply with this new standard from the signature date in December 2019.⁹⁸

⁹⁵ Sidewalk Toronto, *supra* note 84 at page 122.

⁹⁶ Sookman *supra* note 64 at 2.

⁹⁷ Vaver *supra* note 65 at 58.

⁹⁸ David Schwartz & Walter Chan, “What the amendments to the USMCA mean for Canadian IP law” (03 January 2020), online: Smart & Biggar <<https://www.smartbiggar.ca/insights/publication/what-the-amendments-to-the-usmca-mean-for-canadian-ip-law>>.

Copyright may be registered with the Canadian Intellectual Property Office, but copyright protection occurs simultaneously alongside the creation of the original work in question; therefore, unlike the patent scheme registration of a copyright is not necessary. However, registering a copyright may be an attractive choice for commercial purposes and may also be helpful in the context of a litigation process.⁹⁹ There are two main purposes behind the copyright scheme. First, copyright encourages and rewards authors for their efforts in producing original works by granting that work protection from being appropriated or exploited by others without the owner's consent.¹⁰⁰ Second, copyright grants authors moral rights in their works, which is "the right to have their work properly credited and not changed in ways that prejudice their honour or reputation".¹⁰¹ However, a practical purpose underlying copyright protection today is related to securing financing for original works, which includes databases.¹⁰²

Vaver lists the following "contours" of copyright protection: originality; preventing copying; protecting expression only; and lastly, balancing the competing demands of copyright and the protection of ideas within the public domain. Only *original* literary, dramatic, musical, and artistic works may be protected by copyright.¹⁰³ Canada's standard of originality in copyright was settled by the Supreme Court of Canada ("SCC") in *CCH Canadian Ltd. v Law Society of Upper Canada*.¹⁰⁴ The SCC determined that an original work "involves the exercise of skill and judgement that is not so trivial as to be purely mechanical".¹⁰⁵ The fixation doctrine identifies an inherent requirement to copyright protection. The fixation doctrine was developed

⁹⁹ Vaver *supra* note 65 at 63.

¹⁰⁰ Vaver *supra* note 65 at 56-57.

¹⁰¹ Vaver *supra* note 65 at 57.

¹⁰² *Ibid.*

¹⁰³ *Ibid*; *Copyright Act*, RSC 1985, c C-42, s 5(1).

¹⁰⁴ 2004 SCC 13, [2004] 1 SCR 339 [*CCH*].

¹⁰⁵ Sookman *supra* note 64 at 119; *CCH supra* note 104 at para 25.

at common law and is therefore, not explicitly mentioned by Canada's *Copyright Act*. Fixation is a "substantive requirement that must be met in order for copyright to vest".¹⁰⁶ Fixation demands that a work exist for some amount of time in a "concrete or non-evanescent form".¹⁰⁷ Another significant inherent component to establishing copyright protection is determining authorship. The Canadian *Copyright Act* does not define "author", however "generally it is the person who writes, draws, or composes the work, or is otherwise responsible for putting it into a concrete form".¹⁰⁸ Authorship concerns can arise in several contexts including an employee-employer relationship as well as in a collaboration partnership. The author will be the individual who expresses the original work.¹⁰⁹

The *Copyright Act* engages the Canadian *Charter of Rights and Freedoms*, in particular section 2(b) freedom of expression.¹¹⁰ Copyright protection is meant to prevent *unauthorized* copying of an original work; it is not meant to be used to prevent free expression or create unfair competition. For instance, if two similar but original works are created independently copyright can exist in both the works because no reproduction has occurred. Copyright intends to protect expression alone and not the idea that is expressed. The idea contained within a copyrighted expression is free for all to use. For this reason, if an idea can only be expressed in a limited number of ways, copyright protection may likely be denied in order to prevent restricting freedom of speech. Therefore, copyright protection should not be used to censor speech and

¹⁰⁶Sookman *supra* note 64 at 152.

¹⁰⁷ *Ibid*; *Canadian Admiral Corp. v Rediffusion Inc.*, [1954] Ex. C.R. 382, 20 CPR 75 [*Rediffusion*]; *Théberge v Galerie d'Art du Petit Champlain inc.*, 2002 SCC 34, [2002] 2 SCR 336 [Théberge].

¹⁰⁸ Sookman *supra* note 64 at 437.

¹⁰⁹ *Ibid*.

¹¹⁰ *Canadian Charter of Rights and Freedoms*, s 2(b), Part I of the Constitution Act, 1982, being Schedule B to the Canada Act 1982 (UK), 1982, c 11 [*Charter*].

restricting the flow of ideas that belong to the public domain.¹¹¹ Protecting the information belonging to the public domain from copyright abuse is a concern that arises in data collection, and specifically in the ownership and use of databases.

Copyright is a key data ownership consideration that arises in the distinction of data types, and it plays an important role in energy justice research. Data is an intangible property; however, ownership of data is difficult to protect under intellectual property law, and specifically under copyright. Canada adopts the merger doctrine wherein copyright protects an original expression and not the underlying facts contained within the original expression.¹¹² Copyright also protects the order of arrangement of facts, as in an anthology.¹¹³ However, this leaves minimal protection for data owners who invest time, effort, and resources by compiling those facts into data.¹¹⁴ In contrast, Europe created a *sui generis* database right.¹¹⁵ This *sui generis* database right protects the database from unauthorized extraction and use of the data contained within. The *sui generis* database right goes beyond the limitations of copyright protection and will apply if and only if there has been a “quantitatively or qualitatively substantial investment in either the obtaining, verification or presentation of its contents”.¹¹⁶ This is comparable to the “sweat of the brow” doctrine employed by England’s copyright laws, which grants copyright protection to works where an author has added their labour, skill, and or judgement.¹¹⁷ Further,

¹¹¹ *Commonwealth v John Fairfax & Sons Ltd*, 1981 55 A.L.J.R. 45 (Aust. H.C.); *A-G (UK) v Wellington Newspapers Ltd*, 1988, [1988] 11 N.Z.L.R. 129.

¹¹² *CCH supra* note 104.

¹¹³ Teresa Scassa, “Data Ownership” (4 September 2018), online(pdf): Centre for International Governance Innovation <<https://www.cigionline.org/publications/data-ownership>>.

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*

¹¹⁶ EC, Commission Directive 96/9/EC on the legal protection of databases, [1996] OJ L 77/27.3 at article 7.

¹¹⁷ *Ladbroke (Football) Ltd. v William Hill (Football) Ltd.*, [1964] 1 All ER 465 (HL (Eng)).

copyright protection of data engages the public interest; facts are the public domain, but should data owners be rewarded for their effort with a monopoly.

The data collected in energy justice research is personal information and may include for instance, income level, education, age, sex, ethnicity, and political preferences. The law of confidential information can be used to protect data collected as well as the public interest.¹¹⁸ However, there are limitations to this approach as some data is publicly available and further, “personal information is generally not capable of ownership – at least not by the person to whom it pertains”.¹¹⁹ Most importantly, the law presently does not recognize a property right in data, nor the ownership of personal data.¹²⁰ There is an exploitative element to collecting data about marginalized groups experiencing energy injustice and then profiting from that collected data.

Section 3.4: Data and Privacy

The data collected in energy justice research is personal information and may include for instance, income level, education, age, sex, ethnicity, and political preferences. The law of confidential information can be used to protect data collected as well as the public interest.¹²¹ However, there are limitations to this approach as some data is publicly available and further, “personal information is generally not capable of ownership – at least not by the person to whom it pertains”.¹²² Most importantly, the law presently does not recognize a property right in data, nor the ownership of personal data.¹²³ There is an exploitative element to collecting data about marginalized groups experiencing energy injustice and then profiting from that collected data.

¹¹⁸ Scassa *supra* note 113.

¹¹⁹ *Ibid*; Teresa Scassa, “Sharing Data in the Platform Economy: A Public Interest Argument for Access to Platform Data” (2017) 50:4 UBC L Rev 1017; *McInerney v McDonald*, [1992] 2 SCR 138, 93 DLR (4th) 415 [*McInerney*].

¹²⁰ Scassa *supra* note 113.

¹²¹ *Ibid*.

¹²² *Ibid*; Scassa *supra* note 119; *McInerney supra* note 119.

¹²³ Scassa *supra* note 113.

Data is a significant energy justice factor because it quantifies the energy justice issue and enables the identification of energy injustice occurring in a region. Easier identification of energy injustice occurring can lead to a better understanding of any contributing factors. Up to date data is necessary to continually identify where energy injustice is occurring and to use this information to try and predict where it may occur in the future. This makes data regarding energy consumption and demographic information extremely valuable to producing energy justice research and solutions. However, the creation, storage, use, and ownership of data, which are all integral to producing energy justice research, raises a host of questions that intellectual property law has not yet fully addressed. Professor Teresa Scassa writes extensively on data and privacy issues but has also focused on these subjects within Ontario's energy sector.¹²⁴ Moreover, Scassa explores balancing the "rights of data owners and the public interest in access to and reuse of data".¹²⁵ In the case study, I examine what this balancing act requires while striving for energy justice within Ontario.

Further, data can be categorized into three types: representative data, implied data, and derived data.¹²⁶ Representative data measures facts, such as a person's age.¹²⁷ Implied data is created through inferences; for instance, political support and preferences based on other online activity.¹²⁸ Lastly, derived data is "produced from other data".¹²⁹ Scassa also differentiates between "data", "facts", and "information" noting that these are related but ultimately, separate terms.¹³⁰ For instance, data's non-neutrality is an important feature as it establishes that data

¹²⁴ Scassa and Vilain *supra* note 10.

¹²⁵ Scassa *supra* note 113.

¹²⁶ Scassa *supra* note 113; Rob Kitchin, *The Data Revolution: Big Data, Open Data, Data Infrastructures & their Consequences* (Thousand Oaks: Sage Publication Inc., 2014).

¹²⁷ Scassa *supra* note 113.

¹²⁸ *Ibid.*

¹²⁹ *Ibid*; Kitchin *supra* note 126.

¹³⁰ Scassa *supra* note 113.

cannot exist independently and will inherently contain economic, ethical, temporal, spatial and philosophical biases.¹³¹ Comparably, facts are “the building blocks of data”,¹³² in which facts are objective reality, and the recorder of facts is viewed as a “discoverer”.¹³³ Information is understood as “contextualized facts”, such as a news report.¹³⁴

Section 3.4.1: Data Governance

Any examination of data collection will necessarily include an understanding of data governance. Data governance has been defined as “the exercise of authority and control over the management of data”.¹³⁵ The goal of data governance is to maximize the value of data assets.¹³⁶ Without strong and well-defined data governance practices, an organization risks failing to maximize the value of these data assets.¹³⁷ More importantly, idle data creates a liability for lost data (e.g. losing track of data, or having it compromised by external threats such as “hackers” or a technical failure). This liability is a serious concern for any organization that does not employ adequate data governance practices.¹³⁸

Privacy is another significant concern that arises in energy justice literature. There are two elements to the privacy obstacle: first, a social element wherein citizens feel distrust about how energy efficiency technologies might be used; second, the present privacy legislation. The push for energy efficiency measures, particularly measures that are technology-based face

¹³¹ *Ibid*: Kitchin *supra* note 126.

¹³² Scassa *supra* note 113.

¹³³ *Ibid*: *Feist Publications Inc. v Rural Telephone Service Co.*, 499 US 340 (U.S. Sup. Ct 1991) [*Feist*].

¹³⁴ Scassa *supra* note 113.

¹³⁵ Rene Abraham, Johannes Schneider & Jan vom Brocke, “Data governance: A conceptual framework, structured review, and research agenda” (2019) 49 Intl J of Info Mgmt 424; DAMA International, The DAMA guide to the data management body of knowledge (Technics Publications LLC., 2009).

¹³⁶ Boris Otto, “Data Governance” (2011) 3:4 Business & Information Systems Engineering 241 at 241.

¹³⁷ Adrian Gregory, “Data governance- Protecting and unleashing the value of your customer data assets: Stage 1: Understanding data governance and your current data management capability” (2011) 12:3 J of Direct, Data and Digital Marketing Practice 230.

¹³⁸ *Ibid*.

rejection and suspicion by the very communities that could most benefit from integration of these measures. For instance, Hielscher and Sovacool evaluate the discourse surrounding the integration of smart meters in the United Kingdom.¹³⁹ Hielscher and Sovacool label the mistrusting attitude toward smart meter integration and use as the “dystopian ‘Big Brother’ discourse”.¹⁴⁰ This discourse has respondents believing that smart meters would allow utility companies to invade their privacy, gain detailed information about their private lives, and allow these utility companies to control their appliances. This pessimistic and untrusting view of utility companies was supported by fear-mongering news articles. For instance, Hielscher and Sovacool discuss how both the Sunday Times and The Guardian published articles supporting the Big Brother discourse.¹⁴¹ Specifically, these articles made equivocal claims about the amount of information that a smart meter could collect and how the government could use the information collected from smart meters.

However, this Big Brother discourse is not limited to the United Kingdom. In fact, the European Data Protection Supervisor cautioned that the benefits of implementing smart meters will also entail collection of personal information on a colossal scale.¹⁴² Additionally, while smart grids are an important tool in the transition to a sustainable energy system, they are not the only tool available to achieve such a system, as seen in this paper’s case study. For instance, Brown and Kennedy define internet of things (“IoT”) devices as “create[ing] the potential for

¹³⁹ Sabine Hielscher & Benjamin Sovacool, “Contested smart and low-carbon energy futures: Media discourses of smart meters in the United Kingdom” (2018) 195 J of Cleaner Production 978.

¹⁴⁰ *Ibid* at 986.

¹⁴¹ Hielscher & Sovacool *supra* note 139; Kevin Dowling & Mark Howarth, “Smart meters to spy on home life” (04 July 2010), online: *The Sunday Times* <<https://www.thetimes.co.uk/article/smart-meters-to-spy-on-home-life-993jqd6frbk>>; Jamie Doward & Caroline Mortimer, “Energy smart meters are a threat to privacy, says watchdog” (1 July 2012), online: *The Guardian* <<https://www.theguardian.com/environment/2012/jul/01/household-energy-trackers-threat-privacy>>.

¹⁴² Hielscher and Sovacool *supra* note 139; John Naughton, “So Which Bright Spark Thought of Smart Meters?” (11 October 2012), online: *The Guardian* <<https://www.theguardian.com/technology/2012/oct/11/smart-meters-dumb-idea-cybersecurity>>.

very fine-grained tracking and profiling of individual consumers in their most private spaces”.¹⁴³ IoT devices can be used in several fields including energy efficiency and can have application in devices including smart thermostats, smart appliances, electrical and hybrid vehicles.¹⁴⁴ The goal of IoT devices in energy efficiency and smart grid applications is to create “dynamic and responsive two-way energy markets in which consumers are also suppliers”.¹⁴⁵ Furthermore, Ontario’s energy system already has well entrenched smart technologies such as smart metering.¹⁴⁶ However, despite the established use of smart metering, Ontarians continue to engage with the Big Brother discourse, and especially in light of the Sidewalk Labs-Waterfront Toronto development.¹⁴⁷

An approach to tackling the Big Brother discourse is expanded on by Hiteva and Sovacool who discuss linkages between energy justice, business, and social innovation. Notably the “due process” linkage they raise is significant for privacy concerns.¹⁴⁸ Hiteva and Sovacool define due process as “focus[ing] on the procedures involved in maintaining or ensuring justice, and embraces principles such as transparency, fairness in exchanges between actors, ensuring sufficient representation in all activities, and meeting relevant standards and laws”.¹⁴⁹ Improving the transparency of the process of collecting information and personal data has the potential to diminish the public’s worries regarding privacy because in Ontario’s smart metering energy system there is no opt-out and obtaining consent from the public is not a consideration nor a

¹⁴³ Abbe Brown & Rónán Kennedy, “Regulating intersectional activity: privacy and energy efficiency, laws and technology” (2017) 31:3 Intl Rev of L, Computers & Tech 340.

¹⁴⁴ *Ibid.*

¹⁴⁵ *Ibid*; Steven E Collier, “The Emerging Enernet: Convergence of the Smart Grid with the Internet of Things” (2017) 23:2 IEEE Industry Applications Magazine 12.

¹⁴⁶ Scassa & Vilain *supra* note 10.

¹⁴⁷ *Ibid.*

¹⁴⁸ Ralitsa Hiteva & Benjamin Sovacool, “Harnessing social innovation for energy justice: A business model perspective” (2017) 107 Energy Policy 631.

¹⁴⁹ *Ibid* at 634.

requirement under the Freedom of Information and Protection of Privacy Act (“FIPPA”), which is Ontario’s public sector data protection law.¹⁵⁰

Thus, demonstrating that the Big Brother discourse, privacy concerns about data collection are significant obstacles to any transition to a sustainable and efficient energy system, including a system that is designed with energy justice.

Contexts in which Data Ownership issues arise:

1. “Data ownership can play a role in commercializing data
2. Data ownership can create monopolies
3. Data ownerships can have public dimensions
4. Data ownership may be challenging to locate
5. Data ownership may play a role in privacy protection”¹⁵¹

Data governance has been defined as “the exercise of authority and control over the management of data”.¹⁵² Others define data governance as “the assignment of decision-making rights with regard to an enterprises ‘data assets’”.¹⁵³ What is common to these definitions is control over decision-making regarding to how data is managed, which will include how it is acquired, stored, used, and destroyed. The goal of data governance is to maximize the value of data assets.¹⁵⁴ Without strong and well-defined data governance practices, an organization risks failing to maximize the value of these data assets.¹⁵⁵ More importantly, idle data creates a

¹⁵⁰ Scassa and Vilian *supra* note 10 at 8; *Freedom of Information and Protection of Privacy Act*, RSO 1990, c F31 at s 39 [FIPPA].

¹⁵¹ Scassa *supra* note 113.

¹⁵² Abraham *supra* note 135; DAMA International *supra* note 135.

¹⁵³ Otto *supra* note 136; Vijay Khatri & Carol V Brown, “Designing Data Governance” (2010) 53:1 Communications of the ACM 148.

¹⁵⁴ Otto *supra* note 136 at 241.

¹⁵⁵ Gregory *supra* note 137.

liability for lost data (e.g. losing track of data, or having it compromised by external threats such as “hackers” or a technical failure). This liability is a serious concern for any organization that does not employ adequate data governance practices.¹⁵⁶

Criteria such as “data quality” and “data stewardship” are important in evaluating data governance practices. Data quality refers to the ‘fitness for use’ of that data.¹⁵⁷ Data quality is integral to determining the value of any data asset and it is a sub-goal of maximizing data value.¹⁵⁸ Data quality management is a sub-set of data management.¹⁵⁹ Data management relates to data governance conceptually, because data governance establishes what decisions are necessary to control and maximize the quality (i.e. the value) of data, as well as who is authorized to make data management decisions.¹⁶⁰ Whereas data management is the mechanism that implements the data governance framework. Data and data governance are integral to energy justice studies. Data creates value, that value can be limited by ineffective management, which results from a lack of a core data governance strategy and framework to inform management practices. In the context of energy justice, poor data governance is minimizing the value of data that can be used to identify energy justice within Ontario, and to create solutions in the long-term based on data that is already being collected by energy sector actors. The types of data information I predict will be most useful to energy justice research are information on energy consumption and cost of electricity.

¹⁵⁶ *Ibid.*

¹⁵⁷ Otto *supra* note 136; Richard Y Wang, “A product perspective on total data quality management” (1998) 41:2 Communications of the ACM 58.

¹⁵⁸ Adir Even & Ganesan Shankaranarayanan, “Utility-driven assessment of data quality” (2007) 38:2 ACM SIGMIS Database 75; Otto *supra* note 136.

¹⁵⁹ Otto *supra* note 136.

¹⁶⁰ *Ibid.*

Section 3.5: Sidewalk Toronto “Smart City” Requirements

Although it was heralded as a smart-city, the Sidewalk Toronto project was so broad in scope that it arguably surpassed even the broadest definitions of a smart-city. The literature on Sidewalk Toronto reflects the many different facets of this project and the resulting concerns that arose. Just some of topics that the Sidewalk Toronto literature covers includes, legal privacy, theoretical privacy, data, energy efficiency, climate change, corporate governance, urban planning, architectural, intellectual property law litigation, and data sharing issues. Understanding how the many differing areas of intersection that Sidewalk Toronto brought together is crucial. For this reason, establishing the type of smart city that Sidewalk Toronto might have been is an integral starting point. Hans Scholl and Suha AlAwadhi propose that a smart city aims for “creation, integration, combination, development, and effective leverage of resources and assets toward innovation, attractiveness, competitiveness, sustainability, and livability of an urban space facilitated and accelerated by the ubiquitous use of advanced information and communication technologies with local governments playing key instigating roles in this process.”¹⁶¹ David Murakami Wood and Debra Mackinnon submit that the “smart city” is really a label for a combination of the Internet of Things and Big Data as “a pre-packaged answer to urban problems.”¹⁶² Alexandra Flynn and Mariana Valverde suggest that a smart city “is a series of complex combination of technical and governance implications about digitization and computing in the fabric of urban places”.¹⁶³ Significantly, Flynn and Valverde also suggest that the term “smart city” carries an assumption that municipalities and cities are

¹⁶¹ Hans Jochen Scholl & Suha AlAwadhi, “Smart Governance as Key to Multi-Jurisdictional Smart City Initiatives: The Case of the ECityGov Alliance” (2016) 55:2 Social Science Information 255 at 258.

¹⁶² David Murakami Wood & Debra Mackinnon, “Partial Platforms and Oligoptic Surveillance in the Smart City” (2019) 17:1 Surveillance & Society 176 at 176.

¹⁶³ Alexandra Flynn & Marian Valverde, “Where The Sidewalk Ends: The Governance of Waterfront Toronto’s Sidewalk Labs Deal” (2019) 36 Windsor Y B Access Just 63 at 279. Flynn and Valverde’s article gives helpful guidance about the administrative law implications of Waterfront Toronto operating the request for proposals (“RFP”) process. Specifically, the article outlines how similar public bodies are a common occurrence in Canada at the municipal level and that the decisions that these public bodies undertake are subject to judicial review. If Sidewalk Toronto had proceeded, this discussion on administrative law would have been relevant to this case study at the discussion of the UDT and especially in determining whether the *Privacy Act* would have applied to Sidewalk Toronto and Sidewalk Labs. See also Rob Kitchin, “The Real Time City? Big Data and Smart Urbanism” (2014) 79:1 GeoJournal 1 at 1-2.

not already “smart” and that for this reason, the term “smart city” is actually misleading.¹⁶⁴ Instead, Flynn and Valverde argue that “smart city” refers to local level government decisions about regulating services and programs that integrate new and innovative digital technology.¹⁶⁵ Alternatively, Tierney suggests that Sidewalk Toronto was a new type of smart city, which would have transformed publicly available personal and environmental data into an economic resource, which leads into a discussion of conflicting urban planning theories.¹⁶⁶ Sidewalk Labs likely would have adopted Scholl and AlAwadhi’s definition of a smart city. However, the more appropriate and accurate definition is a blend of Flynn and Valverde’s definition and Tierney’s definition. Sidewalk Toronto intended to integrate complex technological and governance approaches to an urban space with the specific goal to commodify those same spaces.

Section 3.5.1: Sidewalk Toronto: Socio-Political Urban Planning Lens

Tierney argues that the instrumentalization of community members and the public and private spaces these members occupy represents a post-industrial colonial model.¹⁶⁷ One way to interpret the commodification of this kind of data collection and compilation is through Benjamin Bratton’s “the Stack” which refers to a global information economy.¹⁶⁸ The stack model views network technologies as operating vertically and simultaneously,¹⁶⁹ which is helpful for understanding the internal logic of a smart city.¹⁷⁰ The Stack considers the multi-faceted nature of a system and instead of viewing this system as complicated melange, it views the different system elements as “forming a coherent and interdependent whole.”¹⁷¹ Applying the stack model to Sidewalk Toronto results in two stacked layers. One layer performs the function of collecting data, the second layer uses the data to modify services in response to community needs identified in the data.¹⁷² Other conceptions of this kind of digital capitalism exist. For

¹⁶⁴ Flynn & Valverde *supra* note 163 at 279.

¹⁶⁵ *Ibid* at 279 -280.

¹⁶⁶ T.F. Tierney, “Big Data, Big Rhetoric in Toronto’s Smart City” (2019) 7:3 Architecture & Culture 351 at 351 & 352.

¹⁶⁷ *Ibid* at 352.

¹⁶⁸ *Ibid*.

¹⁶⁹ Benjamin Bratton, *The Stack* (Cambridge, MA: MIT Press, 2015).

¹⁷⁰ Tierney *supra* note 166 at 352.

¹⁷¹ Bratton *supra* note 169 at 5.

¹⁷² Tierney *supra* note 166 at 353.

instance, Rob Kitchin and Martin Dodge label this as “code/space”, which occurs “when software and the spatiality of everyday life become mutually constituted, that is, produced through one another.”¹⁷³ In Sidewalk Toronto this mutual constitution can be seen in the merging of community life and using that the subsequent data to create new technologies and innovations.

However, analysing Sidewalk Toronto and similar smart cities through this conception of urban space and planning, reveals potentially sinister social implications. For instance, David Murakami Wood and Stephen Graham argue that The Stack model’s “soft-ware ordered city”¹⁷⁴ enable new modes of social control.¹⁷⁵ For instance, Wood and Graham suggest that automated surveillance, such as the type that would have been present in Sidewalk Toronto, could have been used to “legitimate[e] discrimination over individual actions.”¹⁷⁶ Others have agreed with this view and suggested that one purpose of the Quayside development was to “mostly help its sister company Google think through privacy and data ownership issues with an eye to the U.S. political process.”¹⁷⁷ This has proven true and Sidewalk Labs has launched Sidewalk Infrastructure Partners, which “aims to address urban needs through North America.”¹⁷⁸ Additionally, Andrew Cuomo recruited the former CEO of Google, Eric Schmidt, to

¹⁷³ Rob Kitchin & Martin Dodge, *Code/Space: Software and Everyday Life* (Cambridge: MIT Press, 2011) at 16.

¹⁷⁴ Tierney *supra* note 166 at 353.

¹⁷⁵ David Murakami Wood & Stephen Graham, “Permeable Boundaries in the Software-sorted Society: Surveillance and the Differentiation of Mobility” in Mimi Shellar & John Urry, eds, *Mobile Technologies of the City* (London: Routledge, 2006) at 178.

¹⁷⁶ Tierney *supra* note 166 at 353.

¹⁷⁷ Edward Hore, “Why Sidewalk Labs Pulled Out of Toronto” (11 May 2020), posted on Ed Hore, online: Facebook

<<https://www.facebook.com/photo.php?fbid=3033160443416691&set=a.426062237459871&type=3&theater>>.

Edward Hore is an intellectual property law litigator in Toronto who was also part of Waterfront Toronto’s Stakeholder Advisory Committee for Quayside. In this advisory committee role, Hore had the opportunity to interact with Sidewalk Labs representatives directly and ask questions about the project. Hore found that questions about data collection and data governance were answered vaguely and the MIDP was similarly vague on these same concerns. One excellent point that Hore raises is the MIDP proposed the Urban Data Trust (“UDT”) as a new way to govern data collection, but that this approach would be a departure from the rest of the city of Toronto. Thus, the Quayside Sidewalk Toronto project would have relied on a data governance framework that did not yet exist when Sidewalk Labs published the MIDP volumes.

¹⁷⁸ Elsa Lam, “Farewell, Sidewalk Toronto” (14 May 2020), online: *Canadian Architect* <<https://www.canadianarchitect.com/editorial-farewell-sidewalk-toronto/>>.

reimagine a tech-based post-pandemic New York, which will be informed by the technology and processes in the failed Quayside project.¹⁷⁹

Most often, the software operating the monitoring function is claimed to be neutral, foolproof, logical, and free from human biases.¹⁸⁰ However, the Sidewalk Toronto MIDP volumes did not address this point about the underlying software assumptions and ideologies and are generally vague about potential privacy violations. For instance, the MIDP documents contain about 1500 pages, which “lacked the substance of a serious development proposal” and contained basic errors throughout.¹⁸¹ Vagueness and lack of detail in the MIDP volumes produced by Sidewalk Toronto does not establish a neutral framework. Instead, this vagueness would have created the opportunity for Sidewalk Labs to create a data monopoly.

The risk of a data monopoly occurring was a significant catalyst in the public’s rejection of Sidewalk Toronto. The public had concerns over data ownership, data collected through public infrastructure, the public’s benefits from any resulting technology and intellectual property developed using collected data, and compliance with data standards of accountability, justice, and fairness.¹⁸² Lisa Austin and David Lie propose a “safe sharing site” approach to data sharing in Sidewalk Toronto to address these concerns.¹⁸³ The safe sharing site approach to data sharing diminishes the risk of re-identifying publicly available de-identified data. Publicly available deidentified data is the data governance model that Sidewalk Labs supported specifically, in the form of the UDT. However, Austin and Lie raise an important point that “releasing data to others [...] undermines efforts to control against forms of misuse of the data, whether deliberate or unintentional.”¹⁸⁴ The safe sharing site proposed by Austin and Lie, functions as “legal digital infrastructure ... that goes beyond solving the technical issues

¹⁷⁹ Lam *supra* note 178.

¹⁸⁰ Tierney *supra* note 166 at 353.

¹⁸¹ Lam *supra* note 178.

¹⁸² Lisa M Austin & David Lie, “Safe Sharing Sites” (2019) 94:4 NYU L Rev 581 at 582-583.

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid* at 584.

associated with data sharing and ensures that it can work with many different forms of legal regulation and governance.”¹⁸⁵ Understanding the type of “smart city” Sidewalk Toronto aimed to be reveals important questions to consider for the next iteration of a Sidewalk Toronto proposal. Mainly, what is the purpose of this smart city, how does it integrate into the existing surrounding city, how does it depart from this city, how does this smart city propose to achieve its goals and function? Will any of these operational considerations impact public and urban life, to what degree, and in what manner?

Section 4: Sidewalk Toronto Case Study and Analysis

Section 4.1: Energy Justice, Data, and Privacy Concerns in the Sidewalk Toronto Project:

The goals of the Sidewalk Toronto project were designed in response to a request for proposals (“RFP”) organized by Waterfront Toronto. Alphabet’s subsidiary Sidewalk Labs won the RFP process with their Sidewalk Toronto proposal in October 2017. The RFP sought a proposal that would revitalize Toronto’s waterfront district and that met five specific requirements. These five RFP requirements were: first, positive job creation and economic development; second, sustainable and climate-positive development; third, housing affordability; fourth, ‘new mobility’, such as biking, transit and pedestrian routes, and; ¹⁸⁶ lastly, urban innovation.¹⁸⁷

Sidewalk Labs was selected for this revitalization project partly because of the company’s focus on “integrat[ing] urban planning, technology, and policy to radically improve quality of life for all”.¹⁸⁸ The Sidewalk Toronto project began by “extensively” consulting with Toronto’s

¹⁸⁵ *Ibid.*

¹⁸⁶ New mobility refers to increasing infrastructure to support more biking, public transportation, and pedestrian walking routes. Urban innovation refers to the ability of third parties creating and implementing new services to deliver to the community. For further clarification see Sidewalk Toronto, “Achieving ambitious priority outcomes”, online: *Sidewalk Toronto* <<https://www.sidewalktoronto.ca/outcomes/>>.

¹⁸⁷ *Ibid.*

¹⁸⁸ Sidewalk Toronto, “Project Background”, online: *Sidewalk Toronto* <<https://www.sidewalktoronto.ca/project-background/>>.

public, as well as relevant business, non-profit, and institutional actors starting at the end of 2017 and over the course of 2018 and 2019.¹⁸⁹ During this time, Sidewalk Toronto started developing their Master Innovation and Development Plan (“MIDP”), which addressed Waterfront Toronto, as well as the municipal, provincial, and federal governments.

The MIDP is split into three volumes. Volume 1 introduced the plans for the Quayside neighbourhood, the River District, and addressed the economic development this project would have created. Volume 2 addressed the following topics: Mobility; Public Realm; Buildings and Housing; Sustainability; and Digital Innovation. The last volume contemplated the following subjects: The Innovative Design and Economic Acceleration (“IDEA”) District; Innovation and Funding Partnership Proposal; Transaction Economics; Achieving Waterfront Toronto’s Priority Outcomes; Implementation; Stage Gates and Risk Mitigation; and lastly, an Overview of the Participants in IDEA District Development.

For this paper, the most relevant volume of the MIDP is volume 2 specifically, chapters 2-5 of volume 2. These chapters encapsulate the energy justice, data, and privacy concerns that are the subject of this paper. In this case study, I focus on identifying how energy justice, data, and privacy concerns arose in the goals of this re-development project, to what degree these concerns were integrated into Sidewalk Toronto’s proposal, and whether Sidewalk Toronto was capable of creating a community that fulfilled the criteria of an “energy just” neighbourhood, while also

¹⁸⁹ *Ibid.* Opponents to the Sidewalk Toronto project felt that the consultation conducted by Sidewalk Labs prior to releasing the plans was not comprehensive or in-depth enough. Bianca Wylie gives an excellent summary of the issue of Sidewalk Labs’ public consultation failure when she wrote: “[Sidewalk Labs] bury a possible outcome for the City in 200 pages of urbanism spiked with digital flourishes and avoid the one page summary we all need — their commercial plans.” See Bianca Wylie, Report from Executive Committee on Sidewalk Toronto. Plus a Word About Consent, Consultation, and Innovation” (30 January 2018), online: Medium <<https://biancawylie.medium.com/report-from-executive-committee-on-sidewalk-toronto-93bbd2bb557f>>.

balancing the privacy needs of members of that community in the extensive collection of data that this project would have required.

Section 4.2: How Energy Justice, Data, and Privacy Concerns Arise in the Sidewalk

Toronto Project

Some of the major concerns around energy justice, data, and privacy, were considered in the Sidewalk Toronto proposal. While Sidewalk Toronto does not explicitly use the term “energy justice” in its materials, many of the sustainability objectives of this project fit the language and ideas behind energy justice literature. For instance, Sidewalk Toronto commits to a goal of energy justice through the language used in the MIDP. The second volume of the MIDP contains an entire chapter dedicated to “Sustainability”, which among other topics focuses on energy innovation and most notably energy affordability.¹⁹⁰ Data and privacy concerns were also a major focus of Sidewalk Toronto and supported by the language of the MIDP. For instance, volume 2 of the MIDP includes an entire chapter solely dedicated to “Digital Innovation”.¹⁹¹ The Digital Innovation chapter covers topics such as digital infrastructure, data standards, a process to determine data use standards, and creating a digital service model that could have been adapted beyond the Sidewalk Toronto project. This chapter also integrates details of the public consultation carried out by Sidewalk Labs regarding this development and specifically, it notes the top four concerns raised by the public and how Sidewalk Toronto responded.¹⁹² These four concerns are as follows:

¹⁹⁰ Sidewalk Toronto, “MIDP Volume 2: Chapter 4: Sustainability” (24 June 2019), online (pdf): *Sidewalk Toronto* <https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/23143305/MIDP_Vol.2_Chap.4_Sustainability.pdf>.

¹⁹¹ Sidewalk Toronto, “MIDP Volume 2: Chapter 5: Digital Innovation” (24 June 2019), online(pdf): *Sidewalk Toronto* <https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/23143337/MIDP_Vol.2_Chap.5_DigitalInnovation.pdf>.

¹⁹² *Ibid* at 455 – 461.

1. “Protect people’s privacy and use data to serve the public good
2. Earn public support through transparent policy, clear language, and data education
3. Tech should be an enabler and an accessible amenity
4. Establish an ethical data governance model for the long-term.”¹⁹³

Section 4.2.1: Energy Justice Goals

The integration of energy justice goals appears to have been a natural and logical step in the design of the Sidewalk Toronto project. Projects that only aim to improve energy efficiency and depart entirely from any reliance on non-renewable energy production do not meet the criteria of an energy just community or energy system. A key feature of energy justice is the inclusion of community members in decision-making processes.¹⁹⁴ MIDP volume 2 chapter 2 concentrates on the engagement of the public regarding Sidewalk Toronto and the public’s concerns about the impacts of this project on the local community. This chapter illustrates how the public’s participation and their feedback was incorporated into the design process of this project. Participation is an integral element of energy justice because it allows community members to advocate for themselves in decision-making processes regarding energy and infrastructure options.¹⁹⁵ The inclusion of community members in decision making processes is also reflected in MIDP volume 2, chapter 5. In this chapter on Digital Innovation, Sidewalk Labs planned to ensure inclusivity by providing free-to-use devices, tech support staff, and digital literacy programs.¹⁹⁶ Notably, at the time Sidewalk Labs was funding GRIT Toronto, which worked with

¹⁹³ *Ibid.*

¹⁹⁴ Poonam Pandey & Aviram Sharma, “Knowledge politics, vulnerability and recognition-based justice: Public participation in renewable energy transitions in India” (2021) 71 *Energy Research & Social Sci* 101824; Alister Forman, “Energy justice at the end of the wire: Enacting community energy and equity in Wales” (2017) 107 *Energy Policy* 649.

¹⁹⁵ Jamie Baxter, “Energy Justice: Participation promotes acceptance” (2017) 2 *Nature Energy* 17128; Ulf Liebe, Anna Bartczak & Jürgen Meyerhoff, “A turbine is not only a turbine: The role of social context and fairness characteristics for the local acceptance of wind power” (2017) 107 *Energy Policy* 300.

¹⁹⁶ Sidewalk Toronto *supra* note 191 at 393.

local communities to create a service called “Collab” aimed at increasing community participation in decision making.¹⁹⁷

The heart as well as the more practical element of achieving EJ goals in the Sidewalk Toronto venture would have relied on using clean electricity for “all heating, cooling, and power needs”.¹⁹⁸ Heating and cooling accounts for about 60% of the Toronto’s GHG emissions and Sidewalk Toronto aimed for full electrification to eliminate the reliance on burning natural gas for heat and hot water and reduce Toronto’s GHG emissions.¹⁹⁹ Most notably, Sidewalk Toronto makes EJ a central consideration by acknowledging that full electrification could be cost prohibitive for both households and businesses, unless full electrification was launched on a large enough scale to equitably re-distribute these costs.²⁰⁰

Sidewalk Toronto’s plan to achieve full electrification, and energy justice goals entailed six steps, also known as the “Innovation Plan”:

1. Introducing energy efficient building design in order to reduce overall energy demands
2. Integration of digital management tools to eliminate energy waste
3. Integration of a thermal grid, which eliminates any reliance on fossil fuels by harnessing local renewable energy production methods which include harnessing geothermal (underground), building energy waste, and sewage heat using electric heat pumps

¹⁹⁷ *Ibid* at 393 and 446.

¹⁹⁸ Sidewalk Toronto *supra* note 190 at 299. One way Sidewalk Toronto planned to achieve full electrification was by partnering with Toronto Hydro and various other technology providers in order to design an advanced power grid, which would integrate a monthly budget tool, solar power, energy management tools and battery storage. See also Sidewalk Toronto *supra* note 190 at 325.

¹⁹⁹ *Ibid*. City of Toronto, *Toronto Green Standard Review and Update* (Report) (Toronto: City Planning Division, 28 September 2017); The Atmospheric Fund, “Keeping Track: 2015 Carbon Emissions in the Greater Toronto and Hamilton Area” (July 2018), online(pdf): *The Atmospheric Fund* < http://taf.ca/wp-content/uploads/2018/09/TAF_GTHA_Emissions_Inventory_Report_2018-Final.pdf>.

²⁰⁰ Sidewalk Toronto *supra* note 190 at 299.

4. Designing and integrating a power grid that relies on solar energy, energy storage methods (batteries), and real-time energy pricing. This clean energy power grid would have supplemented energy supply for the development community during peak times; thus, reducing reliance on the main power grid currently powering Toronto.
5. Increasing recycling and organizing waste processing through a “smart disposal chain”, which would reduce waste as well as GHG emissions from garbage trucks. The smart disposal chain was meant to include waste sorting, “pay as you throw”, underground vacuum tubes, centralized trash hauling, and anaerobic digestion facilities for applicable waste.
6. Lastly, protecting the waterfront region’s water quality by introducing green infrastructure and digital stormwater management systems meant to integrate nature into the development. This system could have captured, reused, and treated stormwater diverting this contaminated stormwater from local water bodies.²⁰¹

Each of these tangible six steps satisfy energy justice goals by addressing different elements of EJ. The preamble to the Innovation Plan outright addresses the goal of full electrification is presently more expensive than burning natural gas.²⁰² However, by addressing this obstacle and also proposing to re-distribute the additional increased costs of energy, Sidewalk Toronto’s proposal embraces key elements of EJ. Affordability is a key issue within energy justice literature and the shift to clean and renewable energy production, which includes electrification, risks leaving behind those who are energy poor.²⁰³ Those who are energy poor may find

²⁰¹ *Ibid* at 301.

²⁰² Sidewalk Toronto *supra* note 190 at 299.

²⁰³ Chukwuka G Monyei et al., “Justice, poverty, and electricity decarbonization” (2019) 32 *The Electricity J* 47; Bouzarovski & Simcock *supra* note 27; Szulecki *supra* note 8; Energy Poverty Observatory, “What is energy poverty?” (2020), online: *Energy Poverty Observatory* < <https://www.energypoverty.eu/about/what-energy-poverty>>.

themselves in a position where they are unable to afford energy costs, unable to adopt clean and renewable energy options, which can have detrimental impact on their living conditions, health, economic and social status.²⁰⁴ Additionally, the suggestion to re-distribute the costs of electrification is also an element of energy justice specifically, it addresses the distributive justice element of energy justice. Re-distributing the costs of electrification would have provided the benefit of electrification to the entire Sidewalk Toronto neighbourhood, while lessening the burden of its cost on the most vulnerable community members. By addressing this concern outright, Sidewalk Toronto attempted to integrate energy justice into all later stages of its sustainability plans including its Innovation Plan.

Additionally, the third chapter of MIDP volume 2 “Buildings and Housing” contains two energy justice relevant sections: a section on affordability and additional section outlining public consultation on this subject. Affordability is the crux of energy justice. In metropolitan cities like Toronto where housing has become increasingly unaffordable, energy poverty and energy injustice is not just a hypothetical scenario but a harsh reality.²⁰⁵ Additionally, cold climate regions throughout Canada, like Toronto, are especially prone to energy poverty during winter months when there is an increased reliance on energy for heating needs.²⁰⁶ The additional and

²⁰⁴ Energy Poverty Observatory *supra* note 203; Lilia Karpinska & Sławomir Śmiech, “Breaking the cycle of energy poverty. Will Poland make it?” (2021) 94 Energy Economics 105063; Romanic Baudu, Dorothée Charlier & Bérangère Legendre, “Fuel Poverty and Health: a Panel Data Analysis” (2020) French Association of Environmental and Resource Economists Working Paper No. 2020.04; Sefa Awaworyi Churchill, Russel Smyth & Lisa Farrell, “Fuel poverty and subjective wellbeing” (2020) 86 Energy Economics 10460.

²⁰⁵ John Lorinc, “The case for funding more affordable green housing” (19 May 2020), online: *The Corporate Knights* < <https://www.corporateknights.com/channels/built-environment/case-funding-affordable-green-housing-15898864/>>; Mike Crawley, “Why hydro bills are so high in Ontario” (22 November 2016), online: *Canadian Broadcasting Corporation* < <https://www.cbc.ca/news/canada/toronto/ontario-hydro-bills-1.3860314>>; Jamie Mauracher & Melaine Zettler, “Toronto’s affordability crisis: How residents are being forced out of the city they love” (9 March 2020), online: *Global News* < <https://globalnews.ca/news/6575583/toronto-affordability-crisis/>>.

²⁰⁶ The Financial Accountability Office of Ontario, “Home Energy Spending in Ontario: 2019 Update” (2020), online (pdf): *The Financial Accountability Office of Ontario* < [https://www.fao-on.org/web/default/files/publications/FA1911%20Home%20Energy/Home%20Energy%20Spending%20in%20Ontario%202019%20Update.pdf](https://www.fao.on.org/web/default/files/publications/FA1911%20Home%20Energy/Home%20Energy%20Spending%20in%20Ontario%202019%20Update.pdf)>.

intentional focus on affordability and the community's wellbeing makes Sidewalk Toronto an energy justice project. Moreover, with additional information about community needs this model could hypothetically have been scaled down to serve the needs of rural communities as well. Therefore, through the combination of energy efficiency, clean energy objectives and most importantly, increased participation of the public Sidewalk Toronto integrated the most salient aspects of energy justice into the goals of this land development project.

Section 4.2.2: Data and Privacy Concerns

There was a significant integration of data and privacy concerns in the articulated goals of Sidewalk Toronto. Data and privacy concerns arise in tandem given their causal relationship. Following the public consultation stage and the concerns raised about protecting personal privacy, Sidewalk Toronto emphasized the importance of protecting data and the privacy of would-be community members by designing supporting principles. For instance, the privacy by design principle “requires thinking about potential privacy impacts at the very start of a project lifecycle and proactively embedding privacy measures into the design of a project”.²⁰⁷ Another example is the “first principle [that] data be collected and used with the public good in mind”.²⁰⁸

Notably, MIDP Volume 2 chapter 2 contains an entire section dedicated to the public consultation feedback this project received and how the project would address the concerns raised by the public. Further integration is found in chapter 3 of volume 2 of the MIDP which addresses buildings and housing. One goal within this chapter is a “multi-zoning” model wherein a space can have multiple zoning uses determine by the needs of the community and without the need to formally re-zone it. For instance, a single building could hypothetically house residential,

²⁰⁷ Sidewalk Toronto *supra* note 191 at 455.

²⁰⁸ *Ibid.*

commercial, and light industrial tenants.²⁰⁹ The mechanism to achieve this multi-zone model would have relied on a real time “building code system” which would have collected data about how the space was being used including information about noise levels, air pollution, and other “nuisance levels”.²¹⁰ To collect information about noise levels and air pollution, environmental sensors would have been placed inside building hallways to monitor the air quality of the space as well as any vibration and the impacts it might have on the structural integrity of the building. For instance, a gauge sensor within the floor could detect increased weight bearing on the floor and analyze how that additional weight is affecting the structural integrity of the unit or building generally.²¹¹ Sidewalk Toronto confirmed that the sensors and other monitoring devices proposed in this multi-zoning model would have been limited in the data it collected. These sensors would not have been capable of capturing any personally identifying information and collection of data would have been governed by the Responsible Data Use Guidelines (“RDU”) developed by Sidewalk Labs. The anonymous data collected would have been made publicly available by Sidewalk Toronto to promote innovation; however, sharing and making this data available to government and other third-party actors would also have been governed by the terms of the proposed Urban Data Trust (“UDT”).

Section 3.2.2.1: The Responsible Data Use Guidelines and Urban Data Trust

The RDU and UDT are key points that engage data and privacy concerns. Chapter 5 addresses the RDU and UDT among other considerations. This chapter on Digital Innovation begins by defining “urban data” as “information gathered in the city’s physical environment,

²⁰⁹ Sidewalk Toronto, “MIDP Volume 2: Chapter 3: Buildings & Housing” (24 June 2019) at 252, online (pdf): Sidewalk Toronto < https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/23143126/MIDP_Vol.2_Chap.3_BuildingsandHousing.pdf>.

²¹⁰ *Ibid* at 251.

²¹¹ *Ibid* at 252.

including the public realm, publicly accessible spaces, and even some private buildings”.²¹²

Urban data is more far reaching than the definition of personal information, which has a legal definition in Canada. Personal information can be defined as any information that “could be used, alone or in combination with other information to identify an individual or that is associated with an identifiable individual”.²¹³ Urban data would include personal, non-personal, aggregate, and de-identified data.²¹⁴ This chapter also introduces Sidewalk Toronto’s holistic approach to responsible digital innovation. Sidewalk Toronto’s holistic approach is comprised of four components:

1. The innovation plan
2. Clear standards that make data publicly accessible
3. A data use assessment guided by the RDU and headed by an independent UDT
4. Providing some digital services that aim to increase innovation and would be open to competition from other third parties.

The RDU guideline is a set of objectives designed to respect individual privacy, ensure responsible data use, and integrate other concerns regarding data ethics that arise in the design stage of project proposals.²¹⁵ This guideline is drafted by Sidewalk Labs and serves as a general approach to data and privacy protection for Sidewalk Lab projects, without any mention of regional legislation. Therefore, the RDU guideline is not specific to the Sidewalk Toronto project

²¹² Sidewalk Toronto *supra* note 191 at 377.

²¹³ *Ibid* at 417.

²¹⁴ *Ibid* at 416-417.

²¹⁵ Sidewalk Labs, “Responsible Data Use Guidelines” (2 June 2020), online: *Sidewalk Labs* <<https://sidewalklabs.com/rdu/>>.

and does not incorporate any provisions of the relevant privacy legislation applicable to the city of Toronto. The RDU guideline is comprised of the following six objectives:

1. “Beneficial Purpose
2. Transparency and clarity
3. Data minimization, security, and de-identification by default
4. Publicly accessible by default
5. Explicit consent required for disclosure of personal information to third parties
6. Responsible AI principles required”²¹⁶

The UDT was intended to act as a steward of any urban data that would have been collected. In its role managing data, the UDT would have been responsible for balancing digital innovation within the community and simultaneously protecting the public interests as expressed through the feedback obtained through the public consultation. Notably, the UDT would have offered community members who had data collected about them to share in any of the profits derived from the sale of that data.²¹⁷ The UDT would have been responsible for monitoring the RDU guidelines and the associated RDU assessments making sure that actors who wish to access publicly available data are complying with the RDU and enforcing these guidelines as well.

Notably, Sidewalk Labs hoped that the UDT would have developed into a public sector or quasi public sector actor through the course of the Sidewalk Toronto project.²¹⁸ In this vein, the initial implementation period of the UDT would have been carried out by the final agreement by

²¹⁶ *Ibid.*

²¹⁷ Anna Artyushina, “Is civic data governance the key to democratic smart cities? The role of the urban data trust in Sidewalk Toronto” (2020) 55 *Telematics and Informatics* 101456.

²¹⁸ Sidewalk Toronto *supra* note 191 at 383.

Waterfront Toronto and Sidewalk Labs. This final agreement would establish the UDT and ensure that it was not controlled by either Waterfront Toronto or Sidewalk Labs.²¹⁹ The UDT's structure would be dictated by the final agreement, which would have established a non-profit entity with a board consisting of five members. Sidewalk Labs suggested that the five members could initially include experts regarding data governance, privacy, intellectual property, and representatives for the community, the public-sector, academia, and the Canadian business industry.²²⁰ The UDT board would act akin to an Ethics board in academia and hire employees to maintain the UDT, such as Chief Data Officer to operate the UDT on a daily basis.²²¹ Sidewalk Labs envisioned that the Chief Data Officer would make decisions about enabling different innovation applications the opportunity to collect data with the relevant privacy legislation.

There was a hope that, over time, the UDT would become a public government-like actor, which suggests that this trust would incorporate the same characteristics and criteria that any other government public body would. For instance, throughout the chapter on digital innovation, the UDT is frequently described as independent, much like governmental bodies acting free from external influence. The independence proposed suggests that Sidewalk Labs would not have any influence over how this UDT would have been governed.²²² However, there is no further information on how the UDT would maintain its independence from Sidewalk Labs, other than Sidewalk Labs would not directly control the UDT. However, there is no mention of preventing board members or the Chief Data Officer of the UDT from being associated with Sidewalk Labs. Further, as part of the comparison of the UDT to a public or quasi public actor, the Sidewalk

²¹⁹ *Ibid* at 420.

²²⁰ *Ibid*.

²²¹ *Ibid* at 421.

²²² *Ibid* at 383.

Toronto project emphasized that collected data from the community would be open, accessible, and secure.²²³ This language is also reflected in the RDU guideline in objective #4.

However, this assumed position that data must be made publicly available, raises privacy concerns. For instance, Ontario's Privacy Commissioner challenged this approach and labeled the UDT as "problematic".²²⁴ Specifically, the Ontario Privacy Commissioner was unconvinced by the efficacy of the UDT. Some of the reasons the Ontario Privacy Commissioner did not support the UDT was the lack of a legislative framework to regulate this data governance model and a worry about protecting the privacy of community members by limiting the accessibility to any data controlled by the UDT framework.²²⁵ The Ontario Privacy Commissioner suggested that this review of the UDT model would require evaluating the proposed mechanisms to maintain the UDT's independence from third parties as well as Sidewalk Labs.²²⁶ Additionally, smart cities initiatives like the Sidewalk Toronto project are an opportunity to conduct a governmental review of the UDT data governance model and could have been an opportunity to address outdated sections of federal and provincial privacy legislation.

A further consideration regarding the assumption that data held by the UDT was automatically going to be publicly available, is the complete omission of consent. Sidewalk Labs' response to protecting the privacy of its users takes the form of a distributed credential infrastructure model. This model draws on the distributed credential protection (DCP) product common to the field of cyber security. The DCP product disassembles data, encrypts it and then

²²³ *Ibid.*

²²⁴ Donovan Vincent, "Sidewalk Labs' urban data trust is 'problematic,' says Ontario privacy commissioner" (26 September 2019), online: *The Toronto Star* < <https://www.thestar.com/news/gta/2019/09/26/sidewalk-labs-urban-data-trust-is-problematic-says-ontario-privacy-commissioner.html?rf> >.

²²⁵ *Ibid.*

²²⁶ *Ibid.*

stores it in separate pieces on several servers.²²⁷ Sidewalk Labs envisioned running the digital infrastructure for this project through a DCP-type product as a means of minimizing the amount of information collected about individuals. Sidewalk Labs suggests that using this approach would exclude the creators of the digital services; thus, isolating the information associated with digital transactions between the two acting parties.²²⁸ For instance, Sidewalk Labs relies on a rental agreement example between a landlord and a tenant, wherein Sidewalk Labs is the digital creator but only the landlord and tenant have access to the information contained in their transaction.²²⁹ However, this DCP model of operation still assumes consent and does not explain at what point consent would have been obtained. Further, Sidewalk Toronto relies on a broad definition of “urban data” and arguably even these types of transactions are captured by that definition. It appears that even transactional information would end up in the UDT, which simply re-engages the same consent issue.

The assumption of automatic consent disregards the role that obtaining consent plays in data collection and adopts an all-or-nothing approach, wherein belonging to the Sidewalk Toronto community as a resident or commercial tenant implies a complete forfeiture of privacy rights. This is noteworthy because local residents were hesitant to share their information with third parties and were not in favour of selling their data and having it widely accessible by third parties, even after removing any personally identifying information from that data.²³⁰ Sidewalk Toronto’s exclusion of consent as a critical component in the UDT could have been remedied in a variety of ways. Obtaining consent to data collection can take several different formats; for

²²⁷ Kathikanand CISM, CEH, “Distributed Credential Protection” (23 February 2016), online: *LinkedIn* <<https://www.linkedin.com/pulse/distributed-credential-protection-karthikanand-cism-ceh/>>.

²²⁸ Sidewalk Toronto *supra* note 191 at 398-399.

²²⁹ *Ibid* at 398.

²³⁰ Sidewalk Toronto *supra* note 191 at 454.

instance, Sidewalk Toronto could have provided the option to consent to some collection of data, while giving the opportunity to decline other elements of data collection. Sidewalk Toronto's assumption of consent in relation to data collection resembles the collection of other urban data wherein passersby within a city automatically add to data collection by virtue of their presence.²³¹ For instance, a car driving through Toronto's downtown core would be included in the data collected on traffic flow. However, the key difference between the average Torontonian driver and a Sidewalk Toronto community member would be the degree of anonymity. While a traffic light may register the presence of an additional car, it differs significantly from a building or residential unit that can register noise, air quality, energy usage among other personal criteria. In both instances, the information collected into data can be scrubbed of personally identifying factors, but this raises further questions regarding how such a deidentifying process might look in the context of Sidewalk Toronto.

Lastly, Sidewalk Toronto's Digital Innovation chapter mentions privacy legislation such as the Personal Information Protection and Electronic Documents Act ("PIPEDA"), the Municipal Freedom of Information and Protection of Privacy Act ("MFIPPA"), and the Freedom of Information and Protection of Privacy Act ("FIPPA") but fails to engage with these pieces of legislation further than infrequent off-hand references. Importantly, there is no specific examples of how these pieces of legislation might arise in the context of operating the UDT. In other words, the core of the data operation underlying the Sidewalk Toronto project is not specific enough to its jurisdiction. Lack of specificity in applying legislation fails to acknowledge any limitations on the feasibility of this project. Further, the Digital Innovation chapter fails to address the resources that a community member might need to consult in order to be full

²³¹ Scassa *supra* note 113.

informed of the extent of data collection. Given the public consultation conducted by Sidewalk Labs and the public's apprehension about protecting personal privacy, the Sidewalk Toronto project could have better integrated such resources and further information about privacy legislation. The nominal references to privacy legislation impact the efficacy of the UDT, the RDU, and features like the multi-zoning system proposed which relies on extensive monitoring of real time data. Ultimately, Sidewalk Toronto deeply engaged data and privacy concerns without a clear path forward.

Admittedly this section does not cover all instances of energy justice, data, and privacy concerns contained within the three volumes of the MIDP. Instead, this section focuses on the types of language used to identify instances of EJ, data, and privacy concerns. Using the language criteria, I selected significant examples from the MIDP volumes where the goals, objectives, and mechanisms intersect with EJ, data, and privacy. Ultimately, the goals of Sidewalk Toronto positively integrated EJ concerns and this project had potential to be deployed as a tool against energy injustice. However, the intersection of these same goals with data and privacy reveals weak points in the Sidewalk Toronto plan.

Section 4.3: Relevant Privacy Legislation

The Sidewalk Toronto project engaged many different sectors, levels of government and pieces of legislation. This paper focuses on the data sector, data and privacy legislation at the federal, provincial, and municipal level. The focus on the data sector alone is informed by the analysis in section 4.2.2 of this paper, which revealed considerable weaknesses in the design of the Sidewalk Toronto project with respect to data collection and protection of personal information and privacy. For this reason, the following pieces of legislation will be analyzed in the context of the Sidewalk Toronto goals: The federal *Privacy Act* and *PIPEDA*, the provincial

FIPPA, and lastly, the municipal-level *MFIPPA*. This group of legislation applies to the Sidewalk Toronto project because it focuses on how data can be collected and lays out the rights individuals have regarding their privacy. The entirety of each of these pieces of legislation will not be examined, only provisions that are relevant to the Sidewalk Toronto project will be examined in this section. Ultimately, this next subsection will demonstrate that the legislation is not at a stage to support this type of development and will raise the issues that prevented this project from proceeding further.

Section 4.3.1: The *Privacy Act*

The *Privacy Act* is a federal piece of legislation and came into effect in Canada on July 1, 1983. This statute governs how the Canadian government and other governmental institutions must handle personal information. This act applies to government institutions, which includes departments, ministries of the government of Canada, or other entities listed in the schedule to this act, as well as any Crown corporations and subsidiaries of such corporations.²³² This piece of legislation is relevant because the proposed UDT was envisioned as becoming a public body at some point in the operation of Sidewalk Toronto. Further, the Privacy Commissioner of Canada as well as Supreme Court of Canada have held that the *Privacy Act* has “quasi-constitutional status”.²³³ To determine whether the Privacy Act applied to Sidewalk Toronto and the UDT a

²³² *Privacy Act*, RSC 1985, c P-21 at s 3.

²³³ David Crane & Peter Quon, “Privacy Commissioner of Canada argues for rights-based privacy laws in Annual Report” (23 January 2020), online: McCarthy Tétrault < <https://www.mccarthy.ca/en/insights/blogs/techlex/privacy-commissioner-canada-argues-rights-based-privacy-laws-annual-report>>; Office of the Privacy Commissioner of Canada, “A Guide for Individuals: Protecting Your Privacy: An Overview of the Office of the Privacy Commissioner of Canada and Federal Privacy Legislation” (2015), online (pdf): *Office of the Privacy Commissioner of Canada* < https://www.priv.gc.ca/media/2036/guide_ind_e.pdf>; *R v Spencer*, 2014 SCC 43, 375 DLR (4th) 255 [Spencer]; *R v Jones*, 2017 SCC 60, 418 DLR (4th) 382 [Jones]; *R v Jarvis*, 2019 SCC 10, 433 DLR (4th) 195 [Jarvis].

governmental control test will be conducted. To determine whether an actor is governmental or not the following legal tests apply:

1. The control test: was the actor governmental in nature? Was there a certain degree of governmental control.²³⁴
2. Government Function Test: does the actor exercise governmental activities or functions.²³⁵

Neither Sidewalk Toronto nor the UDT were “governmental in nature” at any point leading up to the moment this project was cancelled. There was no significant degree of governmental control in the organization of this project. There were legislative limitations on this project but that does not establish sufficient governmental control. For these reasons, Sidewalk Toronto and the UDT do not satisfy the control test.

Similarly, Sidewalk Toronto does not meet the “government function” test. Even though courts have held that an entity like Sidewalk Toronto that is not controlled by government may still be government for the purposes of section 32 of the Canadian *Charter* if it performs governmental functions.²³⁶ Governmental functions are activities that are considered governmental in nature.²³⁷ Handling data and developing a neighbourhood is not governmental in nature otherwise other land developers would also face this test. Therefore, neither Sidewalk Toronto nor the UDT meet the government function test and are not government actors to which the *Privacy Act* applies.

²³⁴ *McKinney v University of Guelph*, [1990] 3 SCR 229, 76 DLR (4th) 545 [McKinney].

²³⁵ *Godbout v Longueil (City)*, [1997] 3 SCR 844, 152 DLR (4th) 577 [Godbout]; *Greater Vancouver Transportation Authority v Canadian Federation of Students*, 2009 SCC 31, 309 DLR (4th) 277 [GVTA].

²³⁶ *Charter* *supra* note 110 at s 32; *Godbout* *supra* note 235.

²³⁷ *GVTA* *supra* note 235.

Section 4.3.2: Personal Information Protection and Electronic Documents Act (“PIPEDA”)

PIPEDA is a federal piece of legislation that came into force on April 13, 2000. *PIPEDA* applies to private entities like Sidewalk Labs and the UDT, which collect, use or disclose personal information in the course of a commercial activity.^{238,239} For the purposes of *PIPEDA*, a commercial activity is defined as “any particular transaction, act, or conduct, or any regular course of conduct that is of a commercial character, including the selling, bartering or leasing of donor, membership or other fundraising lists”.²⁴⁰ Notably, Section 4(2)(a) of *PIPEDA* specifies that this legislation does not apply to government actors because the *Privacy Act* applies instead. *PIPEDA* addresses consent in section 6.1 wherein “...the consent of an individual is only valid if it is reasonable to expect that an individual to whom the organization’s activities are directed would understand the nature, purpose and consequences of the collection, use or disclosure of the personal information to which they are consenting”.²⁴¹ This provision is relevant in understanding Sidewalk Toronto’s demise. Arguably, the nature and consequences of Sidewalk Toronto’s collection of data was not clear because of the novel nature of this smart city. As noted in section 4.2.2 of this paper, Ontario’s Privacy Commissioner opposed granting unlimited access to the data collected by Sidewalk Toronto because it would not have adequately protected the privacy of community members.

²³⁸ Office of the Privacy Commissioner of Canada, “Questions and Answers regarding the application of PIPEDA, Alberta and British Columbia’s Personal Information Protection Acts” (November 2004), online: *Office of the Privacy Commissioner of Canada* < https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda/r_o_p/02_05_d_26/ >.

²³⁹ *Personal Information Protection and Electronic Documents Act*, SC 2000, c 5 at s 4(1)(a) [*PIPEDA*].

²⁴⁰ Office of the Privacy Commissioner of Canada, “PIPEDA in brief” (May 2019), online: *Office of the Privacy Commissioner of Canada* < https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda/pipeda_brief/ >.

²⁴¹ *PIPEDA* *supra* note 239 at s 6.1.

Granting the public access to the data held by the UDT raises a red flag because of the amount of data that is collected and handled by a single entity. Data is collected on individuals in very mundane activities such as using a credit card, which records your patronage of a particular business. However, it is unprecedented for that data to be collected by a single entity that has also recorded other activities in your day, particularly within more intimate settings such as your home. Given the broad definition of urban data that Sidewalk Toronto relies on this possibility would have become a reality.²⁴² Further, overseeing this colossal scale of data collection by a single entity increases risks associated with protecting the personal information contained within the data itself. Therefore, Sidewalk Toronto's collection of data would have been unprecedented, which makes obtaining fully informed consent a challenge under section 6.1 of *PIPEDA*.

However, section 7.1 of *PIPEDA* enumerates exceptions to obtaining consent in order to collect data. These exceptions allow for data collection without consent in the following circumstances: when the collection is in interest of the individual and consent cannot be obtained in a timely way (s. 7(1)(a)); when obtaining consent would compromise the availability or the accuracy of the information and the collection is reasonable “for purposes related to investigating a breach of an agreement or a contravention of the laws of Canada or a province”.²⁴³ This exception in particular is overly broad and in the context of a project like Sidewalk Toronto could threaten a community's protection of personal information and privacy. Additionally, this provision strongly supports the position of Ontario's Privacy Commissioner that the present privacy legislation is not capable of upholding the data governance model proposed by Sidewalk Toronto.

²⁴² Sidewalk Toronto *supra* note 191 at 426.

²⁴³ *PIPEDA supra* note 239 at s 7(1)(b).

Another exception provision that raises similar concerns is found at section 7(1)(d) and allows for collection of data without obtaining consent where the information is publicly available and is specified by the regulations.²⁴⁴ This applies directly to the UDT structure, which intended to grant public access to the urban data collected throughout the Sidewalk Toronto project. Due to the novelty of Sidewalk Toronto, this exception provision is too broad. The data held by the UDT would remove personally identifying elements, but the urban data would have encompassed a significant amount of information about the public, semi-public, and private spaces within this development, and would make this information publicly available. Together with the broad definition of urban data, this creates the possibility for Sidewalk Toronto to overstep boundaries and collect information falling within the scope of their “urban data” definition without having to necessarily obtain consent for this collection.

Furthermore, section 7(2) outlines instances where use of data is permitted without knowledge or consent. Specifically, section 7(2)(c) and (c.1) allow for use of data that is publicly available. This is concerning given the proposed operation of the UDT, which would make all collected data publicly available. This provision highlights the conflict between Sidewalk Toronto’s intention to publish this data and their stated desire to protect community member’s information.²⁴⁵ Similarly, section 7(3)(f) and (h.1) are provisions that allow organizations to disclose personal information without the consent of the subject. The same concerns arise regarding this provision.

²⁴⁴ The regulations referred to by *PIPEDA* include 13 different pieces of regulation. The most relevant regulation for the purposes of this paper is the Regulations Specifying Publicly Available Information, which deals with the permissible instances of personal information that is made publicly available.

²⁴⁵ Sidewalk Toronto *supra* note 191 at 379 and 384.

Section 4.3.3: Freedom of Information and Protection of Privacy Act (“FIPPA”)

The FIPPA legislation is Ontario’s provincial equivalent to PIPEDA and similarly, applies to institutions in order to “provide a right of access to information under the control of [that] institution”.²⁴⁶ Further, the purpose of this legislation is “to protect the privacy of individuals with respect to personal information about themselves held by institutions and to provide individuals with a right of access to that information”.²⁴⁷ There are three principles guiding this provision, which are:

- (i) “Information should be available to the public
- (ii) Necessary exemptions from the right of access should be limited and specific, and
- (iii) Decisions on the disclosure of government information should be reviewed independently of government;”²⁴⁸

The principle that information should be available to the public mirrors the goal of the UDT. However, FIPPA does not define information; instead, it defines personal information as “recorded information about an identifiable individual” which may include information about their race, nationality, ethnicity, skin colour, religion, age, sex, sexual orientation or marital or family status as well as information about their education, medical, psychiatric, psychological, criminal, employment history.²⁴⁹

The use of “information” in section 1(a) is vague and does not affirm whether this refers to the definition of personal information. This is an issue of clarity that could be taken advantage of to interpret this provision in favour of Sidewalk Toronto at the expense of would have been

²⁴⁶ *FIPPA supra* note 150 at s 1(a).

²⁴⁷ *Ibid* at s. 1(b).

²⁴⁸ *Ibid* at s.1 (a) (i)-(iii).

²⁴⁹ *Ibid* at personal information definition (a)(b).

community members. If this type of interpretation is adopted, then Sidewalk Toronto could have access to a significant amount of in-depth personal information and after removing personally identifying factors, would have been in a position to provide that information to third parties. This is akin to a condominium developer having access to such information and granting the public access to it. As a lead developer,²⁵⁰ Sidewalk Labs would have an unprecedented degree of control over information that is normally not available to other developers. Once more, this implication reveals that the privacy legislation is not prepared to handle such complex realities. While Sidewalk Labs does delineate the different roles that Waterfront Toronto, the City of Toronto, real estate developers and third-party vendors would adopt throughout the process of completing this project, perhaps Sidewalk Labs should have created more distance in their involvement in completing this project and instead delegated their role in collecting, managing, and ultimately, selling data to an independent, public body. Perhaps by doing so, the general public would have had more trust in this project.

Section 4.3.4: Municipal Freedom of Information and Protection of Privacy Act

(“MFIPPA”)

The MFIPPA is similar in purpose and scope to FIPPA. The MFIPPA also applies to institutions in order to provide “a right of access to information under the control of institutions.”²⁵¹ The principles that guide the access to information include: information should be available to the public, limitations on access to information should be limited, decisions on disclosing information ought to be subject to independent review. One of the most important principles guiding this legislation is the aim to protect an individual’s privacy regarding their

²⁵⁰ Sidewalk Toronto, “MIDP Volume 3: Chapter 2: Innovation and Funding Partnership Proposal” (24 June 2019) at 86, online (pdf): *Sidewalk Toronto* < <https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/09/03162019/MIDP-Volume-3-The-Partnership-Accessible.pdf> >.

²⁵¹ *Municipal Freedom of Information and Protection of Privacy Act*, RSO 1990, c M 56 at s 1.

personal information and to provide access to that information when it is held by an institution.²⁵² This last principle adheres to the goals of EJ. By encouraging access to information held by institutions, an individual has more agency. That individual can understand how their data is being used by that institution, and can make informed decisions on how they share that data moving forward.

Typically, many people ignore and skip the terms and conditions of the online services that they use.²⁵³ Doing so unwittingly exposes individuals to privacy risks depending on the specific clauses contained within a set of terms and conditions. For instance, two professors created a fake social network called NameDrop, which contained a clause in the terms and conditions that the user would provide their first-born child and share their data with the National Security Agency as payment for access to the social network service (“SNS”).²⁵⁴ Within the NameDrop experiment, 543 students joined this SNS, and 74% chose a “quick join” option which completely skipped the TOS.²⁵⁵ Of those 26% who did go through the TOS, they did so quickly at a rate of 73 seconds, which suggests that even those who did read the TOS did so without the necessary care and attention to detail.²⁵⁶ In another instance, Donelan Andrews a high school teacher from Georgia won \$10,000 for reading to the end of the terms of service (“TOS”) in a contract for travel insurance.²⁵⁷ The insurance company, Square Mouth

²⁵² *Ibid.*

²⁵³ Jessica Guynn, “What you need to know before clicking ‘I agree’ on that terms of service agreement or privacy policy” (28 January 2020), online: *USA Today* <<https://www.usatoday.com/story/tech/2020/01/28/not-reading-the-small-print-is-privacy-policy-fail/4565274002/>>.

²⁵⁴ Jonathan A Obar & Anne Oeldorf-Hirsch, “The Biggest Lie on the Internet: Ignoring the Privacy Policies and Terms of Service Policies of Social Networking Services” (2020) 23:1 *Information, Communication & Society* 128.

²⁵⁵ *Ibid.*

²⁵⁶ *Ibid.*

²⁵⁷ Square Mouth, “It Pays to Read: We awarded one customer \$10,000 for doing what no one does, but always should”, online: *Square Mouth Insurance* <<https://www.squaremouth.com/campaign/pays-to-read>>.

intentionally ran this “Pays to Read” contest to “highlight the importance of reading policy documentation from start to finish.”²⁵⁸

These examples not only highlight the importance of reading the TOS but also the concerns about the scope of information that would have been collected by Sidewalk Toronto. One of the reasons that people ignore the TOS and blindly accept them is the legalese language used. The language used in TOS is convoluted and incredibly long, which can seem unreasonable when an individual is simply trying to install a sudoku application on their phone, for instance. In the context of installing a new phone application a long TOS may lead an individual to either ignore the TOS and accept those terms blindly or alternatively, they may choose to decline installing that application. Importantly, in the context of installing a new phone application a consumer has a choice to install the application, accept the TOS, or reject the application if they disagree with the TOS. There is no option to modify the TOS.

However, the lack of an option to modify the TOS becomes a massive concern in the context of essential services that do not offer an alternative. For instance, an online service provided by the government such as accessing a personal Canada Revenue Agency account will include TOS. Another example includes applying for government-based student loans such as Ontario Student Assistant Program (“OSAP”), which is conducted entirely online and also includes a set of TOS. In both instances, the TOS reference PIPEDA and FIPPA, accordingly. However, there is arguably no alternative to these services that an individual may seek out, the individual has no choice but to accept those TOS, regardless of whether they read them or not.

²⁵⁸ *Ibid.*

This grossly violates the fundamental common law principle of contractual freedom, which encourages people to enter, modify, or reject an agreement freely according to their own interests. When an individual must use a service, there is no alternative to that service, and they cannot modify the terms of that agreement that restrictiveness undermines contractual freedom. Relating this back to the Sidewalk Toronto project, the TOS were not released, nor was there any clear indication what provisions such terms might contain, who they might apply to, and whether there would be room for modification. Without the option for modification, the Sidewalk Toronto TOS could easily be overbearing. For instance, Sidewalk Toronto relies on a very broad definition of “urban data” to identify potentially collectable information, this could enable the TOS to capture an unimaginable amount of personal information without a clear mechanism for individuals to opt-out, limit, or modify the degree of data collected.

Further, the issue of individuals altogether skipping the TOS would have also been a significant issue for Sidewalk Toronto to address. Sidewalk Labs planned on integrating “a new type of privacy-preserving software infrastructure that would enable people to share only the minimum amount of information necessary to complete a transaction with a digital service or app, with the person’s full consent.”²⁵⁹ Presumably this new type of privacy preserving software infrastructure refers to the DCP model addressed in section 4.2 of this paper; however, this is not clear in the MIDP. Additionally, the weakness of Sidewalk Toronto’s vague information about integrating the DCP model was addressed in section 4.2 of this paper. Regarding TOS, obtaining full consent in the DCP model assumes that those agreeing to data collection are digitally literate, which is not the case for the average person and especially given the data-heavy digital innovations that this project would have incorporated. Further, Sidewalk Lab admits that a third

²⁵⁹ Sidewalk Toronto *supra* note 191 at 385.

party may provide a competing offering for this software infrastructure, which suggests that the TOS would have to be revisited again by those who consented the first time.²⁶⁰ Lastly, Sidewalk Labs does not specify how consent would have been obtained, nor did they provide any further information about the privacy-preserving software other than the mention of the DCP model, which was written about separately at a different point in the same chapter.

An objection to providing modification mechanisms to TOS in the examples of the CRA, OSAP, and even Sidewalk Toronto online services is that alternatives to these do exist in various forms. For instance, some may suggest that there is an option to use CRA services manually. However, this argument is weak because the degree and type of information collected is still the same, the medium of collection has simply changed. In the context of Sidewalk Toronto, there is a degree of choice in electing to reside in this type of smart city neighbourhood except for those residents who rely on affordable housing. Inhabitants of the affordable housing in Sidewalk Toronto do not have a free choice given the extremely limited supply of affordable housing in Toronto. Forcing Torontonians to make a choice between affordable housing and their privacy is cruel and also runs counter to key principles of energy justice. Another reason this objection fails is that omitting the online avenue may not be possible given the nature of the service, and the additional pressure on institutions to become paperless and move their operations entirely online.

In conclusion, the TOS issue illustrates that terms may be overly broad, conceal certain important provisions, which is significant for a novel smart city development such as Sidewalk Toronto. Increasing digital literacy, simplifying the TOS into plain English, and allowing for some modification or option to opt-out of certain provisions or type of data collection are some

²⁶⁰ *Ibid.*

avenues that Sidewalk Toronto should have explored if their concern about protecting privacy was genuine. In particular, there should be either a legislation-based mechanism to raise the standard for modification allowance if the digital service provided is more essential and there are limited or no other alternatives available (e.g., online only government services). A lower standard for modification allowance should also be introduced if the service provided is less vital and there are other alternatives available. Failing some form of a mechanism for modification violates the principle of contractual freedom. Ultimately, the TOS for Sidewalk Toronto commercial tenants, passersby, and especially residents, would represent a contract that overarches all daily life aspects. It is difficult to predict the level of privacy invasion this type of project would require for data collection and operability. The different privacy legislations applicable to Sidewalk Toronto provide the opportunity to request information *already* collected about an individual and allows that person to understand the scope of information collected about them. However, these different legislations do not provide enough protection for individuals, nor do they provide adequate mechanisms to prevent further privacy violations.

Section 5: Understanding Sidewalk Toronto's Failure

The Sidewalk Toronto project promised to achieve several key socio-economic objectives, but faced strong opposition from the public and ultimately, failed. The reasons for this failure can be attributed to the novelty of this development and especially the focus on data collection and potential for privacy violation. This section will focus on why this window of opportunity failed to materialize, explore some of the reasons the public rejected this project, and finally, I will suggest some remedies to improve future smart city proposals similar to this one.

Section 5.1: The Missed Window of Opportunity

After examining the key EJ, data, and privacy objectives in section 3 of this paper, the proposal revealed several areas of weakness. Yet, these objectives are not faulty ones and there is still demand for integrating climate change mitigation in daily life, including through building development and innovation relying on data collection. The discord between societal desire for these objectives and the simultaneous rejection of these same objectives can be explained by John Kingdon's "Three Stream" approach (1984), and specifically the "window of opportunity" component of that theory.

John Kingdon is an American political scientist who developed a three-stream theory to explain massive paradigm shifts.²⁶¹ The three streams are comprised of the problem stream, policy stream, and the politics stream. For a paradigm shift to succeed, these three streams must converge simultaneously to create a policy window. Notably, in Kingdon's theory, a policy entrepreneur must capitalize on this policy window to enact change. Sidewalk Toronto would have been one of the first land development projects emphasizing climate change mitigation, clean energy, and social justice in a neat smart-city package. Ultimately, the policy stream did not converge to create a policy window and further, there was no policy entrepreneur to enact the required changes to ensure Sidewalk Toronto's success.

Section 5.1.1: The Problem Stream

The problem stream in the Sidewalk Toronto project is climate change and the resulting social impacts it has on communities, which is addressed by the EJ goals in chapter 4 of the MIDP. These EJ goals acknowledge that cities are more effective at reducing green house gases

²⁶¹ John Kingdon, *Agendas, alternatives, and public policies*, 2nd ed (New York: Harper Collins College Publishers, 1995) at 116-168.

(“GHGs”) than rural areas with less dense populations.²⁶² This acknowledgement recognizes that cities are an important battleground in the fight against climate change and energy injustice, given the intensity of carbon emitting activities within urban regions. But while Bouzarovski and Tirado-Herrero (2016)²⁶³ do establish that capital cities experience less energy poverty than rural equivalents, their examples are drawn from post-communist countries like Poland, Hungary and Czech. Another key distinction posed by articles like Bouzarovski and Tirado-Herrero’s is the use of measuring criteria. Some metrics for measuring energy poverty include the cost of a home’s energy needs relative to household income, degree of access to electrical grids and clean energy production and technologies, and the frequency of utility interruption.²⁶⁴ Researchers in Canada use the metric of “home energy cost burden” to measure energy poverty as the other metrics mentioned are not available.²⁶⁵ Home energy cost burdens are is the percentage of total after-tax household income spent on electricity and heating the home.²⁶⁶

The beginning of this chapter also mentions the pre-existing energy efficiency and GHG reduction goals already adopted by Ontario and the City of Toronto. Specifically, this chapter highlights Ontario’s elimination of coal-fired power generation as well as Toronto’s Transform TO initiatives.²⁶⁷ Acknowledging the role that cities play in mitigating carbon emission and ultimately, climate change directly speaks to energy justice literature. Cities and urban regions

²⁶² Sidewalk Toronto *supra* note 190 at 299; Nora Schultz, “City Dwellers Harm Climate Less” (23 March 2009), online: *New Scientist* <<https://www.newscientist.com/article/dn16819-city-dwellers-harm-climate-less/>>.

²⁶³ Bouzarovski & Tirado Herrero *supra* note 51.

²⁶⁴ Canadian Urban Sustainability Practitioners, “The Many Faces of Energy Poverty in Canada” (2019), online: *Canadian Urban Sustainability Practitioners* <<https://energypoverty.ca/>>.

²⁶⁵ *Ibid.*

²⁶⁶ *Ibid.*

²⁶⁷ Sidewalk Toronto *supra* note 190 at 299.

are helpful in revealing large scale energy injustice and allow for comparison with other urban regions.²⁶⁸

By looking at climate change through the problem stream lens, energy injustice can be understood as one consequence of climate change itself. Non-renewable energy systems led to climate change through carbon emissions, pollution, and degradation of the environment. The burdens of such energy systems were systematically placed on marginalized communities. For instance, in the 19th century the independent and predominantly Black town of Africville was settled on the outskirts of Halifax, Nova Scotia following the 1812 War. The City of Halifax built railways, oil storage facility, bone mill, slaughterhouse, a leather tanning plant, a tar factory, and a foundry in and around Africville away from the white and wealthier communities in Halifax.²⁶⁹ Specifically, railways were used to transport coal and oil storage facilities were key parts of the non-renewable energy system at the time. As such, the burdens of industry and the existing energy system at the time were concentrated in Africville because it was a racialized community. In 1962, the Halifax City Council voted to relocate the remainder of Africville and in 1970 the last house in Africville was bulldozed.²⁷⁰ Since Africville was razed, the City of Halifax has issued a formal apology to the former residents of this town.

Another example of the concentrated burdens of energy systems falling onto the shoulders of marginalized communities includes the communities surrounding the Tar Sands and separately, the Site C Dam. The Tar Sands communities are impacted by oil pipelines that

²⁶⁸ Bouzarovski & Simcock *supra* note 27.

²⁶⁹ Jennifer Nelson, "The Space of Africville: Creating, Regulating, and Remembering the Urban 'Slum' in Sherene Razack, ed, *Race, Space, and the Law: Unmapping a White Settler Society* (Toronto: Between the Lines, 2002) at 215.

²⁷⁰ *Ibid.* See also Albert Rose, "Rose Report: Report of a Visit to Halifax with Particular Respect to Africville" (24-26 November 1963), online (pdf): Halifax Legacy Content <http://legacycontent.halifax.ca/archives/documents/971.6225H_RoseReport_Africville.pdf>.

transport “energy resources” to Eastern & Western Canada as well as down South to the United States.²⁷¹ These pipelines are prone to leaks and spills, which impact the primarily Indigenous communities in the area including polluting the drinking water available to these communities.²⁷² Energy injustice can also occur within a proposed renewable energy system as seen with the hydroelectric Site C dam in British Columbia. The Site C dam destroys the ancestral land and livelihood derived from that land for the surrounding Indigenous communities.²⁷³ In both the Tar Sands and Site C dam examples, the burdens of energy systems is concentrated around Indigenous communities who are linked to their land culturally, spiritually, and emotionally. This is space that is sacred.²⁷⁴ The burdens of any energy systems, but especially renewable systems, must be carefully considered to avoid leaving small, marginalized communities to face an uphill battle to establish their right to participate in energy decisions with direct impact on their surrounding environment.

This same pattern continues to exist today in different forms. For instance, two natural gas power plants were planned for construction in the City of Mississauga and the Town of Oakville, which are relatively wealthy communities in Ontario. However, following strong opposition from the wealthy residents of these two communities, these two natural gas power plants were cancelled and resulted in a massive financial loss.²⁷⁵

²⁷¹ Ranjan Datta & Margot A Hurlbert, “Pipeline Spills and Indigenous Energy Justice” (2020) 12:1 Sustainability 47 at 1.

²⁷² *Ibid.*

²⁷³ Scott & Smith *supra* note 49 at 209.

²⁷⁴ David Harvey, *Justice, nature, and the geography of difference* (Cambridge: Blackwell Publishers, 1996).

²⁷⁵ Martin Regg Cohn, “NIMBYism at heart of Ontario’s gas plant scandal: Cohn” (2 May 2013), online: *The Toronto Star* <https://www.thestar.com/news/queenspark/2013/05/02/nimbyism_at_heart_of_ontarios_gas_plant_scandal_cohn.html>.

The Sidewalk Toronto project sought to address the core of the problem stream (i.e., climate change) and mitigate the resulting consequences (i.e., energy injustice and unaffordability). In this way, the problem stream was fully realized and well addressed by Sidewalk Toronto.

Section 5.1.2: The Politics Stream

The political stream is a catalyst for a policy window opening and generally follows a change in government administration as well as political actors.²⁷⁶ While the problem stream focused on climate change and how to mitigate it, the politics stream focuses more on addressing the privacy and data concerns of this project. Privacy and data innovation were Sidewalk Toronto's proposed tools to facilitate the solutions to climate change. However, these tools were not adequate in their current state to achieve the goals of Sidewalk Toronto and tackle climate change. Given the privacy implications of this project, the municipal, provincial, and the federal government are all relevant to this project.

Since the acceptance of Sidewalk Labs' response in October 2017, there were elections at the municipal, provincial, and federal levels. There was a municipal election in 2018 for the City of Toronto, where John Tory was re-elected as Mayor. There was also a provincial election in 2018 for the province of Ontario, in which Doug Ford was elected as Premier of Ontario. Lastly, there was a federal election in 2019, which resulted in a re-election of Justin Trudeau as Canada's Prime Minister. Even though these elections occurred within a year of each other, there only one major administrative transition during the course of this project at the provincial level. Neither the continuation of the incumbent governments at the municipal and federal level nor the

²⁷⁶ Kingdon *supra* note 261 at 168.

drastic change in Ontario's provincial government to the Ford's Conservatives was enough of a catalyst to alter privacy legislation on its own.

Section 5.1.2.1: The Real Catalysts: Widespread Rejection and the General Data Protection Regulations ("GDPR")

The real catalyst for changes to Canada's privacy laws so far has been the strong opposition against Sidewalk Toronto and the recent privacy law developments in the European Union ("EU"). The rejection of Sidewalk Toronto came from several directions: local communities, advocacy organizations, and government actors. Local community members rejected the project over fears of potential privacy violations.²⁷⁷ For instance, advocacy groups such as Tech Reset Canada and #BlockSidewalk called for Sidewalk Toronto's cancellation because the project's "omnibus proposal" would have essentially given one party (i.e., Sidewalk Labs) control over most elements of this development.²⁷⁸ Considering that Sidewalk Labs is a New York-based organization, there were also criticisms about where data would be stored, and which jurisdiction's privacy laws would apply.²⁷⁹ Another criticism that engaged EJ was the fact that racialized groups face a more realized threat from surveillance and the project could lead to a digitally equivalent stop-and-frisk, a new kind of racial profiling.²⁸⁰ There was an additional criticism against the impact that violating privacy could have on freedom of speech. For example, the principle of "dazzle camouflage" used to describe individual zebras blending in

²⁷⁷ Tara Deschamps, "Sidewalk Toronto faces growing opposition, calls to cancel project" (18 February 2019), online: *Canadian Broadcasting Corporation* <<https://www.cbc.ca/news/canada/toronto/politicians-business-leaders-want-sidewalk-labs-project-scrapped-1.5023860>>.

²⁷⁸ *Ibid*; Kaitlyn Simpson, "Here's where U of T experts stand on Sidewalk Toronto's controversial smart city plan" (12 January 2020), online: *The Varsity* <<https://thevarsity.ca/2020/01/12/heres-where-u-of-t-experts-stand-on-sidewalk-torontos-controversial-smart-city-plan/>>.

²⁷⁹ Richard Lachman, "Sidewalk Labs' city-of-the future in Toronto was a stress test we needed" (28 May 2020), online: *Policy Options* <<https://policyoptions.irpp.org/magazines/may-2020/sidewalk-labs-city-of-the-future-in-toronto-was-a-stress-test-we-needed/>>.

²⁸⁰ *Ibid*; Gary Armstrong & Clive Norris, *The Maximum Surveillance Society: The Rise of CCTV* (New York: Routledge, 2020).

with the rest of their herd can also be applied to journalists and activists. Increasing surveillance and invading privacy, especially to the degree that Sidewalk Toronto envisioned, would endanger journalists and activists from condemning government actions.²⁸¹ Lastly, one of the most pervasive community-based criticisms against Sidewalk Toronto was the lack of transparency that this project maintained such as contracting their architects to secrecy.²⁸² Another instance of this lack of transparency came after a report by the Ontario Auditor General criticized the RFP selection process by Waterfront Toronto and may have favoured Sidewalk Labs' parent company, Alphabet.²⁸³

At the provincial level, the Ontario Privacy Commissioner rejected the UDT, which was a core component of this project proposal.²⁸⁴ Further, there were anonymous reports from the provincial government that rejected this project because the scope of this project was simply too broad.²⁸⁵ There was also opposition to Sidewalk Toronto at the municipal government level. For instance, city councillors were concerned not only about the privacy implications this project posed but the following issues as well: Sidewalk Labs claim of the developer fees and taxes associated with building this neighbourhood, providing infrastructure support to the immediate areas surrounding this project, as well as running a light rail transit ("LRT") network through the neighbourhood.²⁸⁶ Councillor Gord Perks worried that these issues went beyond the initial

²⁸¹ Lachman *supra* note 279.

²⁸² Marcus Fairs, "Doomed Sidewalk Toronto development "was not dealing with the urgent topics of today" says Ben van Berkel" (15 May 2020), online: *De Zeen* < <https://www.dezeen.com/2020/05/15/sidewalk-toronto-doomed-interview-ben-van-berkel/> >.

²⁸³ Simpson *supra* note 278.

²⁸⁴ Vincent *supra* note 224.

²⁸⁵ Deschamps *supra* note 277.

²⁸⁶ *Ibid.*

community consultation conducted by Sidewalk Labs in 2018 and 2019.²⁸⁷ Perks adamantly rejected Sidewalk Labs' LRT plan.

The European Union enacted the General Data Protection Regulations (GDPR) in May 2018, only a few months after Sidewalk Labs' proposal was accepted by Waterfront Toronto. The GDPR standardized the various data and privacy laws of the various EU members and importantly, provided more protection of personal information for any individuals residing in the EU.²⁸⁸ The GDPR applies to any company that manages and deals with the personal information of EU residents. This includes companies that are stationed and operate outside of the EU. There are many proactive privacy requirements included in the GDPR. For instance, the GDPR imposes a strict definition of consent, which requires that consent is specific, informed, and unambiguous and given freely through a statement or a clear and affirmative action.²⁸⁹ Importantly, individuals may revoke their consent to data collection at any time. Additionally, there is a requirement to maintain rigorous record keeping ensuring compliance with the GDPR. Another requirement is that companies employ a data protection officer if that company deals with personal data on a large scale.²⁹⁰

Section 5.1.3: The Policy Stream

Kingdon describes the policy stream as “policy primeval soup”, which contains drafted ideas that may become formal policy.²⁹¹ For the primeval soup to formalize into the policy stream, countless ideas must fail and fade into obscurity for a select few to succeed. For instance,

²⁸⁷ Sidewalk Toronto *supra* note 188; Deschamps *supra* note 277.

²⁸⁸ Trade Commissioner Service, "The European Union's General Data Protection Regulation", online (pdf): Government of Canada <https://tradecommissioner.gc.ca/tcs-sdc/assets/pdfs/gdpr-eu-rdpd-en.pdf?_ga=2.6469750.555355928.1617218343-1627903482.1617218343>.

²⁸⁹ *Ibid.*

²⁹⁰ *Ibid.*

²⁹¹ Kingdon *supra* note 261 at 116 & 117.

despite the recognition by the UN Declaration of Human Rights of privacy as a human right, Canada has not modified the rights contained within the *Charter* to also include a right to privacy.²⁹² Establishing a right based approach to privacy by integration into the Charter is a policy idea that has faded.

Instead, Bill C-11 also known as the *Digital Charter Implementation Act, 2020* is the most recent privacy and data protection development in Canada has so far survived the policy primeval soup. These latest developments in Canadian privacy laws follow the EU enacted GDPR. Bill C-11 was introduced at the Federal level and would seek to repeal parts of PIPEDA and replace it with the *Consumer Privacy Protection Act*, which would govern the collection, use and, disclosure of personal information for commercial activity.²⁹³ Specifically, this new *Consumer Privacy Protection Act* would update the rules imposed on private sector actors regarding their protection of personal information.²⁹⁴ Bill C-11 would also enact the *Personal Information and Data Protection Tribunal Act* in order to create a tribunal overseeing appeals of orders made by the Privacy Commissioner.²⁹⁵ Bill C-11 seeks to make significant updates to existing Canadian privacy laws. Notably, this bill could even impose significant fines on organizations that infringe on Canadian's privacy.²⁹⁶ For instance, if bill C-11 passes organizations that violate this legislation could be fined the greater of up to five per cent of their

²⁹² *Universal Declaration of Human Rights*, GA Res 217A (III), UNGAOR, 3rd Sess, Supp No 13, UN Doc A/810 (1948) 71 at Article 12; David Banisar & Simon Davies, "Privacy and Human Rights: An International Survey of Privacy Laws and Practice", online: *Global Internet Liberty Campaign* <<http://gilc.org/privacy/survey/intro.html>>.

²⁹³ Department of Justice, "Bill C-11: An Act to enact the Consumer Privacy Protection Act and the Personal Information and Data Protection Tribunal Act and to make related and consequential amendments to other Acts" (04 December 2020), online: *Government of Canada* <<https://www.justice.gc.ca/eng/csj-sjc/pl/charte-chartre/c11.html>>.

²⁹⁴ *Ibid.*

²⁹⁵ *Ibid.*

²⁹⁶ Catharine Tunney, "Companies could face hefty fines under new Canadian privacy law" (17 November 2020), online: *Canadian Broadcasting Corporation* <<https://www.cbc.ca/news/politics/privacy-bill-bains-fines-1.5804779>>.

global revenue or \$25 million. Additionally, this bill proposes to give Canadians the option to opt out of data collection.

Sidewalk Toronto was perhaps the only smart-city land development project that attempted to capitalize on a moment of renewed urgency about climate change. Public awareness and engagement on climate change continue to rise in priority and so, Sidewalk Toronto's integration of climate change objectives into this project maximized this momentum.²⁹⁷ Sidewalk Toronto would have capitalized on this positive climate change momentum by establishing an unprecedented climate-positive development, which had the potential to serve as a blueprint for other development projects in Toronto. The Sidewalk Toronto blueprint could have had a meaningful impact on reducing GHG emissions due to the large scale of building development and construction that occurs within Toronto.²⁹⁸ In essence, Sidewalk Toronto could have been the project that re-oriented building and development priorities in Toronto, which could have been applied to other metropolitan areas within Canada and globally as well. However, much like the politics stream, the policy stream did not converge with the problem stream to create a policy window EJ or privacy and data objectives. Finally, there was no discernible policy entrepreneur to capitalize on such a window of opportunity to enact the paradigmatic change and this is why Sidewalk Toronto failed on both the privacy and data front and to a lesser degree on the EJ front.

²⁹⁷ Sidewalk Toronto *supra* note 190 at 299.

²⁹⁸ Ainsley Smith, "Toronto Continues to Have Most Cranes of Any City in Canada or US" (2 October 2020), online: *Storeys* <<https://storeys.com/toronto-q3-cranes-index/>>; Rider Levett Bucknall, "RLB Crane Index: North America – Q3 2020", online (pdf): *Rider Levett Bucknall* <<https://s28259.pcdn.co/wp-content/uploads/2020/09/Q3-2020-Crane-Index.pdf>>.

Section 5.2: Remedies for Future Data-Heavy Smart City Proposals

While it is too late to rescue Sidewalk Toronto, there are suggestions that can be used to resolve the fatal weaknesses of Sidewalk Toronto in the next smart city initiative. These suggestions are meant to apply to a Canadian context, especially to provinces and territories that are subject to the *Privacy Act* and *PIPEDA*.

Section 5.2.1: A Right to Privacy

First, the strongest way to ensure success in future endeavors that rely on collection of personal information is to establish a right to privacy as a constitutionally protected right. Presently, there is a view of privacy rights as quasi-constitutional, especially the *Privacy Act*.²⁹⁹ In the 2018-2019 annual report by the Office of the Privacy Commissioner of Canada, the Commissioner recommended a rights-based approach to privacy and he devised three key elements of such an approach.³⁰⁰ The first element prioritizes the longevity of a rights-based approach to privacy so that it can withstand constant technological changes. For instance, the Commissioner concedes that defining the pre-requisite information for meaningful consent is often impacted by technological advancements, which results in changing requirements for meaningful consent. This first element requires identifying values associated with protecting privacy, which would insulate such legislation from technological changes. The second key element recommends ending self-regulation within the private sector. Doing so creates a uniform standard that clarifies the obligations for the private sector and increases the accountability of private actors. The Commissioner differentiates between accountability and demonstrable accountability; he endorses demonstrable accountability because that level of accountability must

²⁹⁹ Crane & Quon *supra* note 194; Office of the Privacy Commissioner of Canada *supra* note 22.

³⁰⁰ Office of the Privacy Commissioner of Canada *supra* note 22.

be demonstrated to an independent third-party such as a regulator.³⁰¹ The third key element is mandating a necessity and proportionality standard for collecting personal information. The Commissioner recognizes that digital technologies have made collection of personal information easier than ever before and imposing a necessity and proportionality standard to collection will require those collecting that information to identify a clear purpose for collecting and using that data.³⁰²

Other recommendations made by the Commissioner in this annual report include:

1. Protecting the importance of meaningful consent but including other options where obtaining consent may not be feasible.
2. Introducing a requirement for private and government institutions to demonstrate accountability in managing personal data.
3. Extend the coverage of the Privacy Act to apply to all federal government and political parties.
4. Designing protections against infringements of human rights in a digital era.³⁰³

Integrating these recommendations can improve the privacy protections for individuals against large institutional actors.

Another suggestion that could be integrated into a privacy rights-based approach would be to include a right to privacy in the Canadian *Charter*. Presently sections 7 (the right to life, liberty, and the security of the person) and 8 (the right to be secure against unreasonable search or seizure) are the only attempts that the Charter makes in recognizing a right to privacy.

³⁰¹ *Ibid.*

³⁰² *Ibid.*

³⁰³ *Ibid.*

bottom approach should be pursued as seen in the annual reports of the Office of the Privacy Commissioner. These annual reports led to Bill C-11 and demonstrate the efficacy of a top-down approach. Lastly, following increased political action regarding privacy protection, a policy entrepreneur will be essential for the policy window to succeed. Increasing political attention and action on privacy protection can reveal a policy entrepreneur that can succeed.

Section 5.2.3: Authorship of Data

Setting out clear authorship of data and of personal information can be utilized to improve privacy protection for individuals. The *Copyright Act* does not define “author” but courts have interpreted author to mean “the person who conceives, who expresses ideas, who composes, who creates the work through his effort, his qualities and personal efforts.”³⁰⁸ In the context of the Sidewalk Toronto project this authorship standard deems the party who would have compiled the information into a data set as the author. The Canadian originality standard for granting copyright relies on skill, labour, and judgement, which further supports the notion that Sidewalk Toronto and its parent company would have been the authors of any data collected and then compiled.³⁰⁹ Despite depersonalizing data, authorship rights are broad and have the effect of hampering protection of privacy. For instance, when an individual consents to data collection, they also often consent to the sale or sharing of that data by the collector. Generally, even if that data is depersonalized, the personal information contained within that data can be shared to an unlimited number of third parties without informing the individual.

Williams & Adam N Joinson, ““It wouldn’t happen to me”: Privacy concerns and perspectives following the Cambridge Analytica scandal” (2020) 143 Intl J of Human-Computer Studies 102498 at 4.

³⁰⁸ *Ateliers Tango Argentin Inc. v Festival d’Espagne d’Amerique Latine Inc.*, [1997] R.J.Q. 3030 at para 51, 84 CPR (3d) 56 [translated by author].

³⁰⁹ *CCH supra* note 104.

However, granting an individual authorship in their personal information could offer one last albeit unconventional avenue for data protection. Granting authorship in the personal information faces a significant hurdle: facts cannot be subject to copyright protection; therefore, facts cannot be controlled by an author party. Granting authorship of an individual's personal information grants that individual more autonomy over how that information is managed and could provide a possible avenue for recourse in the event of infringement. The only way to justify such an authorship scheme would be through legislation, and the policy reasons support this. Granting an individual authorship status over their personal information could be one potential remedy to prevent privacy exploitation by large conglomerates like Google and Facebook.

Section 6: Conclusion

The Sidewalk Toronto project was more than just a technologically-ambitious development; it had the potential to create an energy-just community while providing the world with the blueprint to follow its lead. Sidewalk Toronto prioritized energy justice in its aim to revitalize Toronto's waterfront region. Sidewalk Toronto made a clear commitment to becoming a climate-positive community by seeking full electrification of the buildings and infrastructure within this proposed community. Most importantly, the commitment to full electrification was made with the knowledge that there was a potential for unaffordability and therefore, inaccessibility. Sidewalk Toronto's plan to eliminate the affordability obstacle was to re-distribute the additional costs of electrification, although the MIDP documents do not specify how this was going to be achieved. Affordability was superficially mentioned throughout the MIDP documents, but the only tangible solution offered by Sidewalk Toronto was in the

allocation of 40% of the total available housing in the development as affordable housing.³¹⁰ The additional and intentional focus on affordability and the community's wellbeing is what would have made Sidewalk Toronto an energy justice project. With further inspection Sidewalk Toronto would have met only a few key EJ criteria and would have failed abysmally on the protection of privacy. For instance, adopting the factors introduced by Sovacool et al., Sidewalk Toronto undeniably failed on the due process, transparency and accountability, responsibility, and intersectionality factors.³¹¹ As an EJ project, Sidewalk Toronto succeeded at promoting renewable energy production and management as a direct way to fight climate change, while also claiming to prioritize affordability.

Unfortunately, this 'perfect EJ utopia' was embedded with substantial barriers to realization. Primarily, the privacy violation implications of this project made it unfeasible. The vagueness of certain digital components of this development as well as the outdated privacy laws in Canada increased the risk of violating the privacy of residents, commercial tenants, and pedestrians.³¹² Features such as the Urban Data Trust and the proposed distributed credential protection infrastructure software, were especially vague and unclear about how privacy protections would be integrated. The vagueness of the MIDP materials left many questions unanswered, in particular about consent, the scope of data collection, and the options that community members would have to opt-out of certain features. As a result, there was widespread opposition against this project in response to the great potential for privacy abuse to occur.

³¹⁰ There is no specific income or demographic-based criteria to establish how this batch of housing would have been considered affordable. See Sidewalk Toronto, "MIDP Volume 0: The Overview" (15 July 2019), online (pdf): Sidewalk Toronto < https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/07/15180040/MIDP_Volume0_printerfriendly.pdf>.

³¹¹ Sovacool et al. *supra* note 21.

³¹² Alyssa Harvey Dawson, "Digital Governance Proposals for DSAP Consultation" (21 June 2019), online (pdf): Sidewalk Toronto < <https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/20223247/Digital-Governance-Proposals-for-DSAP-Consultation.pdf>>.

Several government actors, advocacy groups, and community members expressed their concerns about this project citing Sidewalk Toronto's all-encompassing approach as problematic and worrisome. Even if Sidewalk Labs had not chosen to withdraw and cancel this project, Sidewalk Toronto was not a feasible land development because of all the unanswered data and privacy questions. Future smart city proposals will need to have a clear, definite, privacy and data approach, which should be informed by community members through public consultation. A successful privacy and data approach will need to engage directly with applicable privacy laws and make it clear what protections those laws offer potential smart-city community members.

There were several barriers in the Canadian context that prevented Sidewalk Toronto to succeed on the privacy and data front. Using John Kingdon's three stream approach, the politics stream failed to materialize in time and did not allow for this development to seize the policy window. However, there were significant developments in the policy stream that could help revive a future policy window but only if a policy entrepreneur is identified. Suggestions to improve the feasibility of future data-intense smart city proposals in Canada include establishing a right to privacy as a *Charter* right, activating the political stream through a top-down approach, and creating an authorship right in personal information to grant more control to individuals over their privacy. Ultimately, data and data collection need to be addressed and integrated into EJ literature for tangible results to follow. Sidewalk Toronto demonstrates a missed opportunity, but one that offers hope and can illustrate what pitfalls to avoid in the next iteration of a smart-city approach to tackling climate change.

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