

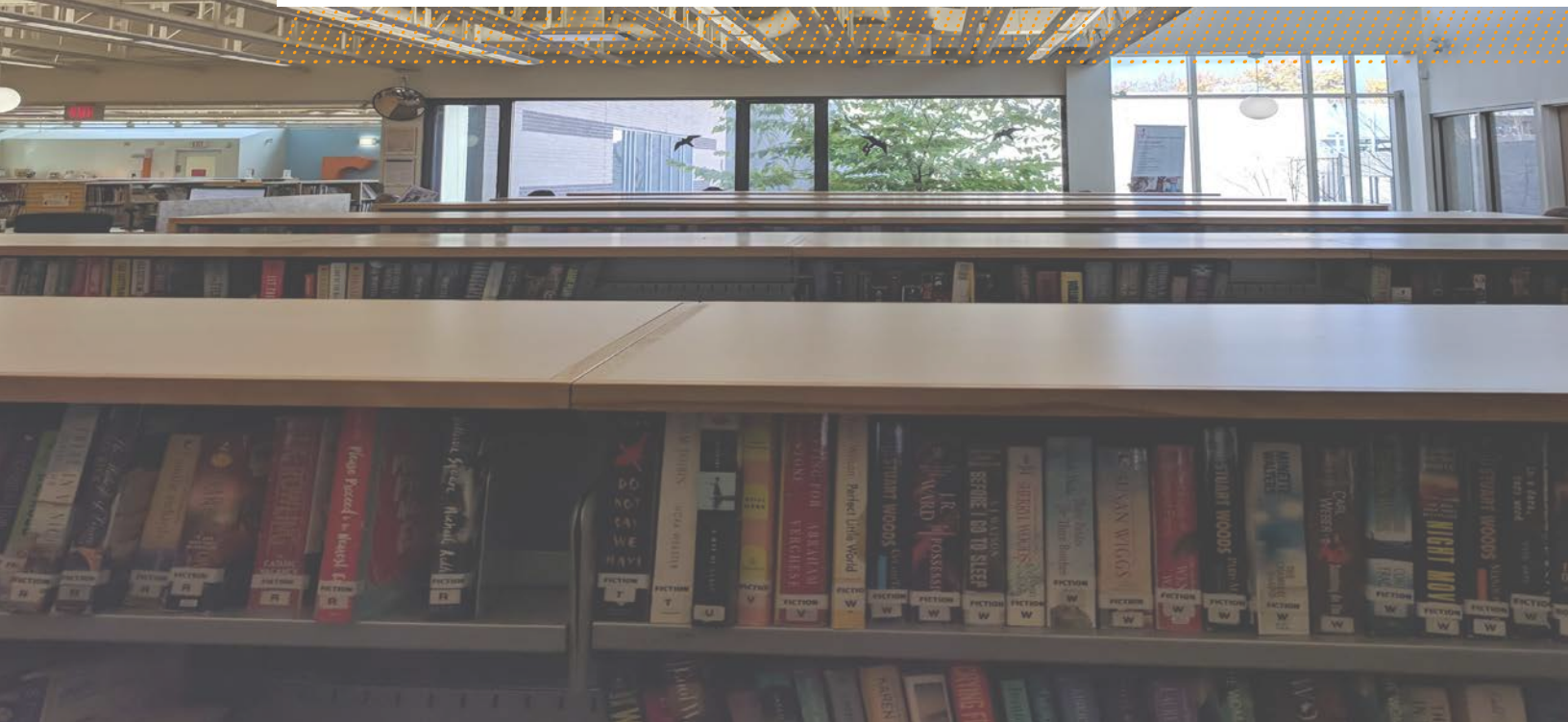


TORONTO  
REGION  
BOARD OF TRADE

# BIBLIOTech

Beyond Quayside: A City-Building Proposal for the  
Toronto Public Library to Establish a Civic Data Hub

January 2019



## **POSITIONING THE TORONTO REGION AS A GLOBAL CHAMPION**

The Toronto Region Board of Trade is one of the largest and most influential chambers of commerce in North America. Our constant flow of ideas, people and introductions to city-builders and government officials firmly roots us as connectors for – and with – the business community. Backed by more than 13,500 members, we advocate on behalf of the business community for policy change to drive the growth and competitiveness of the Toronto region. We act as catalysts to make Toronto one of the most competitive and sought-after business regions in the world, which starts with the success of our members.

Cover photos by Johannes Plenio/Unsplash and Vickey Simovic.

This report was written by Craig Ruttan, Raly Chakarova, Natasha Apollonova, Patrick Gill and Brian Kelcey, with supporting research by Vickey Simovic.

## Table of Contents

<b>Executive Summary .....</b>	<b>1</b>
Summary of Recommendations.....	1
<b>Introduction .....</b>	<b>3</b>
Building a Smart City .....	4
<b>The Proposal .....</b>	<b>6</b>
Land Use and Urban Planning .....	6
Digital Governance and Privacy Protection .....	6
Establishing the Data Hub .....	8
Collection and Use of Data .....	8
Enforcement and Oversight.....	9
Democratic Accountability .....	10
Funding Considerations .....	11
Scalability .....	11
Management of Intellectual Property.....	11
<b>Conclusion.....</b>	<b>13</b>

## Executive Summary

Over the past year, significant public attention has focused on a partnership between Waterfront Toronto and Sidewalk Labs, a Google-affiliated company, to develop an innovative proposal for a 12-acre site referred to as “Quayside.” This project has prompted an important and far-reaching public conversation about how the rights and interests of residents can be protected as smart city infrastructure and urban data collection become more prevalent.

The future economy is a digital economy. As technology becomes more integrated with every aspect of daily life, issues around gathering and using data responsibly will be increasingly urgent. The Toronto Region is leading Canada in economic growth, but maintaining this edge and remaining globally-competitive requires Toronto to establish a data governance model that encourages innovation while protecting personal privacy. The world is watching, and Toronto has the opportunity to lead other global cities and establish a precedent that could provide a competitive advantage.

While the issue of data governance spans many sectors and projects, public conversation is currently focused on the Quayside proposal. There is an emerging consensus that these issues stretch beyond the mandate of Waterfront Toronto, and that this responsibility should not rest with a private company like Sidewalk Labs. The Toronto Region Board of Trade (the Board) agrees and has explored what other institution(s) should assume oversight responsibility for data governance and associated intellectual property (IP) assets for both Quayside and emerging projects.

The Board recommends that responsibility and authority for developing a Toronto Data Hub and related policies be assigned to the **Toronto Public Library (TPL)**, which has the resources, expertise and public trust to lead this process. This report provides additional recommendations related to collection and use of data, enforcement powers, a funding model, and management of intellectual property rights.

### Summary of Recommendations

1. Establish a responsible and scalable data governance model that maintains public control, protects personal privacy and unlocks opportunities for economic growth, setting an example for other jurisdictions.
2. City of Toronto and Waterfront Toronto should retain their existing responsibilities for land use, urban planning and land management as well as the final decision for related issues with the Quayside project.
3. Data governance of the Quayside project should be handled by a third-party organization, not the project proponent.

4. The Toronto Public Library (TPL) should establish the governance structure of a Data Hub, including policies and protocols for the collection and use of data.
5. TPL should determine the structure of a long-term Data Hub, considering both an independent Data Trust model or a ring-fenced Data Repository housed inside TPL.
6. The Data Hub should be overseen by the Information and Privacy Commissioner of Ontario (IPC).
7. The Ontario Government should provide IPC with enhanced enforcement powers, including the ability to levy fines for misuse of data.
8. Once established, the Data Hub should be self-sustaining – operating on a cost-recovery model based on the use of data. The consultation and start-up funds for TPL to lead this project should be provided by Waterfront Toronto through the Quayside as the first *de facto* client for the hub.
9. The public should share in the financial benefits of intellectual property (IP) that is commercialized at Quayside and other public realm IOT smart city projects.
10. TPL should consider using an Academic Consortium or Intellectual Property / Technology Transfer Office approach to capture the economic benefit of IP from the site.

## Introduction

In March 2017, Waterfront Toronto launched a competitive Request for Proposals (RFP) process to solicit innovative submissions for the development of a site called “Quayside.” In October 2017, Waterfront Toronto announced that Sidewalk Labs was the winner of that competition. Sidewalk Labs is a subsidiary of Alphabet, the U.S. parent corporation for Google.

As of November 2018, Sidewalk Labs has employed more than twenty staff on-site at a temporary facility on Quayside. Sidewalk Labs has been moving through various milestones in the development of its plan, and on July 31<sup>st</sup>, 2018, both Sidewalk Labs and Waterfront Toronto agreed to a “Plan Development Agreement” to govern the next steps in project development and evaluation. As part of a submission for plan development, Sidewalk Labs provided additional insight into the potential impact it feels it can bring to the project, which could trigger 9,000 construction and design jobs over the property development cycle, subject to continued progress on development of the agreement and other regulatory issues. Sidewalk’s plan calls for the construction of 2,500 low-carbon residential units, of which 40% would be below-market, including 20% affordable and 5% “deeply affordable”. Commercial space could host over 3,000 full-time jobs, and the site would be designed to exclusively accommodate autonomous vehicles.

Thanks to these and other announcements, the Sidewalk Labs commitment to Toronto could serve as a flagship investment for the Toronto Region’s technology community, both nationally and internationally. The arrival of international technology firms in the Toronto market is a critical step in our own battle to retain technology talent, since the presence of a diverse range of firms can offer Canadians and newcomers a full career’s worth of opportunities without leaving for work in other cities. However, this project has also become a target for criticism and a magnet for controversy.

The Board agrees that two policy concerns often raised about Quayside are well-founded and must be addressed before they become an insurmountable barrier to the long-term progress of this, or any similar, project. Those issues are **data governance**, and the management of **intellectual property rights** and income gained from data collection from public realm Internet of Things (IoT)<sup>1</sup> smart city projects. What makes public realm data collection distinct is that individuals may not know that data about them is being collected at all when they are in the publicly-accessible space, let alone give explicit consent for the data’s collection and use.

In October 2018, Sidewalk Labs proposed that an independent Civic Data Trust, and not the company itself, should control the collection and use of Quayside data. The idea of a data trust

---

<sup>1</sup> Defined by the IPC as “the networking of physical objects connecting through the Internet”. While this is not a new concept, the difference is the complexity of sensors able to collect increasing amounts of data and the proliferation of devices, especially consumer products, built to facilitate communication through Internet connectivity.

has also been raised by members of Toronto’s civic tech community. While there was strong support for the idea that no corporation should own the information generated on site, there was clear unease that the project proponent was responsible for framing the debate.

For its part, Waterfront Toronto has worked to address these issues with help from outside experts. However, even strong supporters of the agency’s mission (the Board among them) must acknowledge that this development-focused agency does not have the mandate or the resources to develop broad technology policies for the larger city, nor is it resourced to provide independent enforcement or oversight over still-emerging technology practices. Waterfront Toronto has taken action to try and resolve those concerns with outside advice through the appointment of a Digital Strategy Advisory Panel, amongst other initiatives. Still, organizational capacity remains a challenge even with that advice in hand.

Furthermore, this challenge is not going to go away; while there is considerable focus on Quayside, similar issues with public realm data collection are already appearing in other public and private sector situations across Toronto and in the Region beyond. So, from the Board’s perspective, this debate offers policymakers an opportunity to identify an overarching institution with the long-term mandate and capacity to consider data management and governance practices for all ‘smart’ technologies used within the City, embracing the new digital economy in a responsible and beneficial way that balances private enterprise against the public interest.

## Building a Smart City

The Board’s mission is to make Toronto one of the most competitive and sought-after business regions in the world. Achieving this goal requires building upon the region’s competitive advantages. The Board has worked with the City of Toronto and the business community since 2016 to help make Toronto a smarter city.

Smart city initiatives are being implemented in Toronto and across the region, with many receiving global praise for their work. A recent Board study conducted with Deloitte Canada estimates 82,000 workers are employed by 450 smart city companies in the Toronto region.

### What is a Smart City?

The Board describes a smart city as  
*“A city that considers tackling its biggest policy challenges with available and emerging technology solutions.”*

Toronto is not the only city becoming more technology enabled. According to Navigant Research, over 170 cities worldwide are presently undertaking at least one smart city project. With this level of activity, there’s little wonder the global marketplace for smart city solutions is estimated to reach \$1.8 trillion by 2020, according to Arup.

The benefits of a smarter city include data-driven decision-making that could mean less congestion and traffic accidents, safer communities and reduced crime, reduced environmental



footprint, more efficient allocation of public resources, and, of course, better informed and engaged citizens.

The arrival of Sidewalk Labs in 2017 created global media attention and has provided Toronto with the opportunity to leap ahead of global competitors in this space – attracting even more talent, investment and innovation to our region.

To ensure this economic acceleration opportunity moves forward, stakeholders must first resolve the challenge of who will hold and manage the new data generated at the Quayside site and other similar sites, and under what terms. If the right solution is found, it will enable future smart city developments in the Toronto Region to advance more quickly, spurring greater innovation and economic growth.



## The Proposal

The Board supports the Quayside project moving forward in a way that benefits Toronto and its residents. Achieving this means determining who is in the best position to oversee the data generated by smart city projects and under what terms. The Board believes the appropriate organization can be identified by considering the following three regulatory concerns:

- 1) Who should oversee the site's land use, land tenure and urban planning challenges?
- 2) Who should oversee the new data generated at the site and ensure its privacy?
- 3) How should the project's public sector intellectual property opportunities be assessed?

### Land Use and Urban Planning

The City of Toronto has the existing authority to regulate zoning and land use planning at Quayside, as with any other piece of property in the city. The Board proposes the City retain and exercise this power, as well as its ability to approve and implement infrastructure projects.

Similarly, Waterfront Toronto should continue its role in planning and managing the projects underway to re-invigorate the City's waterfront. Because Waterfront Toronto was jointly created by all three levels of government, it is best-positioned to make the final decision about whether Sidewalk Labs or any other private partner has met all its contractual requirements and whether the proposal should move forward.

### Digital Governance and Privacy Protection

Unlike traditional developments, Waterfront Toronto's vision for a smart and innovative neighbourhood at Quayside aims to create a test lab for new technologies looking to tackle the urban challenges of today and tomorrow. It also strongly contrasts the current fragmented use of smart city elements on existing urban infrastructure, such as smart traffic lights and parking lots. This vision has prompted challenging and valid concerns about the creation, protection and appropriate use of data that could be generated through such smart city projects, but also the need for consistent guidelines and a level playing field for those that implement these projects.

These highly-specialized regulatory issues stretch beyond Waterfront Toronto's core mandate. Similarly, although Sidewalk Labs should be commended for its willingness to relinquish control of the data and put forward suggestions on how the data could be managed independently, no proponent or participant in the project should hold final authority on setting the rulebook. There is a growing consensus that data governance should be determined by another organization.

In the Board's view, data governance for the Quayside project should be transferred to a neutral third-party organization with three key characteristics:

- 1) Expertise in handling and managing data;
- 2) Authority to uphold privacy laws and resolve disputes; and
- 3) Community credibility and trustworthiness to defend legitimate public interests.

The Board looked internationally for examples of best practices in managing the new forms of data that will be collected and ensuring personal privacy is protected. While various jurisdictions are making progress on resolving a range of smart city issues like privacy, consent and public intellectual property rights, the complicating reality is that the Quayside project is significantly advanced in its likely potential for the use of public realm data. In fact, many international jurisdictions are watching Toronto to see how it reconciles this smart city-building opportunity, which has created tension between public and private interests, with upholding democratic principles and personal privacy. The Quayside project is a precedent-setting opportunity to lead on smart city technology that addresses sticky problems – an opportunity the Board believes can move forward under the right leadership.

After evaluating many different organizations and options that would meet all three criteria set out above, the Board proposes that the **Toronto Public Library (TPL)** establish and oversee the governance structure for what data can be collected in Toronto's smart city developments and determine how that data may be used. TPL would be responsible for consulting with citizens, experts and relevant private and public organizations to decide on the guiding principles of managing the data, such as data ownership, residency, usage, a robust policy framework and reporting structure.<sup>2</sup>

In the Board's view, the benefits to this approach are many. TPL is an inclusive and trusted community hub that is responsible for providing free and equitable access to information and services to Toronto residents since 1810. TPL has over 100 branches throughout the City and already manages an extensive collection of archives. It is also looking to the future of information management with the launch of its own Open Data site guided by an Open Data policy, as well as establishing an Innovation Council to "increase the library's profile in the technology and innovation spheres". Most importantly, it already falls under existing privacy legislation and reporting requirements to both the Province of Ontario and the City of Toronto.

This shift in responsibility for data governance need not interrupt the continued work of Waterfront Toronto's Digital Strategy Advisory Panel, which has been valuable to the public interest and can continue to provide important feedback on many aspects of this project. The

---

<sup>2</sup> It should be mentioned that in the final days of drafting this report, the Toronto Public Library confirmed to the Board that it has had initial contact with Sidewalk Labs over potential provision of library services to the Quayside neighborhood if development plans are realized. From the Board's understanding, there has been no discussion of a data hub, data policy or data management between the two parties at the time at which this recommendation was developed.

Board is merely arguing that this venue is not an appropriate setting for final oversight and resolution of policy issues, given that Waterfront Toronto itself must still negotiate its own commercial stake in this project.

### *Establishing the Data Hub*

This report acknowledges that many questions remain about the entity that could eventually house data from Quayside and other smart city projects. The Board uses “**Data Hub**” as a neutral term to describe the final entity, keeping in mind that the Sidewalk-proposed Civic Data Trust is just one option for this project. While Sidewalk Lab’s proposal can inform TPL’s review, it should in no way limit TPL’s work, which will require extensive public consultations to identify the most appropriate solution. The Board suggests both options of creating an independent Data Trust and a ring-fenced Data Repository housed inside TPL be explored.

Sidewalk Labs and others in the civic tech community have suggested that an independent Data Trust could control the collection and use of data from the Quayside site. According to the Open Data Institute, a data trust is “a legal structure that provides independent third-party stewardship of data.” Once the trust is created, outside actors have limited means to influence the operational decisions of the trustees.

In contrast, a Data Repository could function with more direct and ongoing oversight from its sponsoring organization, providing enhanced oversight, accountability, and access to the organization’s resources and expertise. In Ontario, data from smart meters in the electricity system is housed in the Meter Data Management Repository (MDM/R), operated by the Independent Electricity System Operator as the designated Smart Metering Entity.

### *Collection and Use of Data*

This discussion and ultimate approach are also part of a larger ongoing conversation related to data collection. As smartphone apps and internet-connected devices proliferate, individuals are agreeing to data and privacy policies without understanding the extent of what data is collected or how it is stored and used. In its consultations, TPL needs to address these issues and determine when and how they apply to smart city developments in Toronto, starting with the Quayside project.

When it comes to the data being collected, the Board is a strong proponent of de-identification, or the removal of personally-identifying information as the data is collected. The Board also supports clear consent and opt-out measures to maximize personal privacy protection. When developing its guidelines, the Board also encourages TPL to consider the ‘right to be forgotten’ concept, which is used in the European Union and Australia to give individuals greater choice in the management of their personal data.

In terms of data usage, the Board recommends that TPL establish a **Data Use Review Board** with leading research and data experts, for example, from Toronto's world-class academic institutions. Students and staff in these post-secondary institutions consistently undertake research projects that must first be approved by Research Ethics Boards. Those principles and a set of criteria can be applied and expanded for TPL's Data Use Review Board to review and assess applications from different organizations, including public, non-profit, and private, that want to use the data collected from the smart city projects to help ensure that the benefits to the public are maximized.

### **What Type of Data? What Type of Policy?**

While some of the technologies proposed for the Quayside site are already in use around the world, this project is novel for the extensive use of technologies that are envisioned. Because of the existing deep integration of technology with our daily lives, it raises a question of what data should be housed in a Data Hub, and what is the appropriate scope of new policies to govern that data.

If all data generated on site were required to be managed by the Data Hub, applications with a global reach would be required to carve out data generated on this 12-acre site. While there are concerns about the nature of individual consent to data collection in general, these far-reaching issues should be resolved by governments independent of this or any other specific project.

With these considerations in mind, the Board proposes that this approach focus initially on data generated by physical sensors that are installed in the physical site. This would include sensors in public and publicly-accessible spaces, such as streets and retail areas. The Data Hub would need to approve the installation of these sensors and the storage and use of the data they produce through a publicly-accessible and transparent process.

In developing the Data Hub, TPL will need to address these areas of ambiguity and establish clear guidelines. For example, an individual installing a smart thermostat in their apartment for their own use may not be required to go through the Data Hub if there are consent measures already built in through the installation app. However, if the building management wants to install smart thermostats in all units and have access to that data, the Data Hub would be needed as a way of safeguarding public and personal information.

### *Enforcement and Oversight*

Sidewalk Labs has suggested that a Civic Data Trust could audit appropriate usage of data and digital devices. However, the Board believes that enforcement powers should reside with an empowered, publicly-accountable third party.

As a municipal institution, TPL is already covered by the *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) and therefore, falls under the authority of the **Information and Privacy Commissioner of Ontario (IPC)**. IPC is also responsible for overseeing the *Freedom of Information and Protection of Privacy Act* (FIPPA) and the *Personal Health Information Protection Act* (PHIPA). These three acts already guide how public institutions and healthcare providers collect, use, and disclose personal information. IPC began its oversight of privacy legislation in Ontario back in 1988 with FIPPA, and its mandate has continued to grow alongside increased public awareness of privacy and data concerns. As a result, IPC has existing authority to protect individual privacy, as well as an established process to investigate privacy complaints related to personal information and ensure compliance with the three acts.

IPC has established investigatory powers and experience with the protection of personal privacy and access to information, but their enforcement powers are woefully outdated. For example, while IPC may issue a report or recommendations, they cannot levy fines against an organization for violating MFIPPA or FIPPA. They hold stronger powers under PHIPA, where an offending individual could be fined up to \$100,000, and an organization is liable up to \$500,000.

The Board recommends that the Government of Ontario amend MFIPPA to grant IPC the ability to lay fines for misusing data held by TPL, the recommended Data Hub or any other institution under its purview. This stronger enforcement power is necessary to ensure that corporations have the appropriate incentive to properly handle sensitive personal and public data. The provincial government should also ensure that IPC has the necessary resources to enforce strict compliance with existing legislation and the parameters set up by the Data Hub.

As this work progresses, the federal government should also explore whether the concerns raised by smart cities projects in general require strengthened enforcement powers for the Privacy Commissioner of Canada, which oversees the *Personal Information Protection and Electronic Documents Act* (PIPEDA). The act is the federal privacy law for private-sector organizations that sets out the ground rules for how businesses must handle personal information in the course of commercial activity.

### *Democratic Accountability*

Democratic accountability must remain a foundational component of this project. IPC is an independent office, required to report to the Legislative Assembly of Ontario. Additionally, TPL must provide annual and on-demand reports to the Ontario Minister of Tourism, Culture and Sport. City Councillors are appointed to the Toronto Public Library's board, providing additional municipal oversight by elected officials. Additional measures can also be added to strengthen public trust and oversight.

## *Funding Considerations*

The creation of the Data Hub must be appropriately resourced. While TPL has experience in data management and democratic governance, it will need dedicated funds to ensure the public consultations for, and design of, the Data Hub are done correctly. The Board recommends a fee-for-service model that will ensure the entity is self-sustaining – operating on a cost recovery basis. Considering that the Quayside project will be generating the initial input of data, the Board believes the start-up funding should be provided by Waterfront Toronto as the first de facto customer of the Data Hub. Should Waterfront Toronto choose to, they can recuperate those funds from the project proponent.

The fee structure should be designed as part of the entity's creation, but ultimately ensure that the organizations who wish to collect and use the data housed by the entity will fund its operations on an ongoing basis. In designing the fee structure, TPL should also consider giving preferential lower fees to public sector organizations or non-profits, or making certain types of data freely available to be consistent with TPL's mandate. The Board believes that introducing a fair and transparent fee structure does not undermine democratic access to the data and could help ensure that the data produces value, a very important point explored further below.

## *Scalability*

In its recommendation for TPL to spearhead this regulatory component of the Quayside project, the Board also considered the importance of scalability and a model that will act as a precedent for the management of data for smart city developments across the City. As more technological projects are implemented in Toronto's public realm, whether through private companies or civic initiatives, an overarching body must be responsible to ensure that personal privacy is protected, and data is used responsibly. TPL has the capacity to serve this function for Toronto, and potentially beyond: under the *Public Libraries Act*, TPL is singled out as a resource for the library community in all of Ontario.

In its deliberation on the nature of the Data Hub and whether it should be an independent data trust, TPL should consider scalability and the potential for the entity to host additional data generated in the City (or in other potential partner cities) to ensure consistency and maximize the public benefits and generated knowledge of the collected data.

## Management of Intellectual Property

Several Canadian thought leaders have expressed concern that Canada is missing out on the economic benefits of intellectual property (IP) created in Canada or by Canadians – citing the Quayside project as one recent example. However, agreements between Waterfront Toronto and Sidewalk Labs note the need to negotiate the ownership and use of IP generated at the site. While the Board believes this is a larger problem that ultimately requires a national approach led by the Federal Government, the Board is putting forward an interim and scalable approach for Quayside and other similar future projects.

A primary goal of Toronto's waterfront revitalization is to deliver new economic benefits to Torontonians. This goal is reaffirmed in Waterfront Toronto's Quayside RFP. Recognizing and supporting this goal, the Board believes the issue of managing Quayside's IP is best framed as a discussion about capturing the economic value of the Quayside project.

Quayside is designed to serve as an innovation testbed to develop and deploy new services and products. The ability to benefit from data generated at Quayside, combined with supporting government infrastructure investments and regulatory changes, provides an uplift in the value of this IP. In many ways, the value creation considerations of Quayside are similar to the land value capture potential of a government-procured transit line or station. If policymakers can begin thinking of the Quayside project in these terms, they can start having constructive discussions about capturing the value of Quayside and its future data – which again, will have been catalyzed by government action.

To allow the public to benefit from the potential value of Quayside and its data, the Board recommends that TPL work with other organizations, including Waterfront Toronto, to identify tools to capture a portion of the value of Quayside's data for Toronto residents. As with the traditional land value capture approach used by municipal governments, there are different value capture typologies that could be used. In doing this, it is important that the following three factors are considered:

- 1) Ownership or control of IP or data is usually considered to be required for commercialization (a.k.a. the economical benefit from it). As such, TPL must determine how ownership of new IP or data is shared, if at all. The Board has identified "city tech" as one of Toronto's most promising hotbeds of industrial growth and leadership, making it essential to create a framework that can support this sector while maximizing public benefit.
- 2) The Board acknowledges that the TPL's strong reputation in the grassroots technology community derives in part from its commitment to open data policies. However, considering the City of Toronto has "minimal visibility into how open data is being used by local businesses, entrepreneurs and start-ups" according to the City's own Open Data Master Plan, a fully open data approach should not be a starting assumption. Rather, TPL should determine if an open data approach is an effective method of catalyzing and capturing knowledge, and therefore economic benefit, for Torontonians on a case-by-case basis, and be open to other approaches where doing so is consistent with privacy principles, and where commercial access is appropriate.
- 3) According to Waterfront Toronto's Quayside RFP, the project will deliver an economic benefit for Toronto by "establishing" an urban innovation cluster. Any IP strategy for smart cities needs to consider that Toronto already has a large, growing smart cities ecosystem independent of the Quayside project.



Following its exploratory research, if TPL decides that Torontonians should maintain an ownership stake of Quayside or similar smart city project-related IP, the Board recommends using an Academic Consortium or Patent Office partnership approach.

- 1) **The Academic Consortium Approach:** Researchers and third-party organizations could disclose their commercially viable intellectual property to the Hub and TPL's Data Use Review Board and work with one of the Academic Consortium's innovation offices to patent their invention or creation. While all universities in the Academic Consortium have commercialization offices that offer comparable services, they have different models for sharing revenue on assigned intellectual property. This approach would ensure future revenue generated from the smart city projects benefit Toronto and strengthens its strategically important academic institutions and talent pool.
- 2) **The City Commercialization Office / Tech Transfer Approach:** Researchers and third-party organizations could disclose their commercially viable intellectual property to the Hub and work with a new Intellectual Property Transfer and Commercialization Office, created within the City of Toronto, to protect their invention or creation. The new Office would not only offer commercialization services similar to the services provided by Toronto's universities and colleges, but it would use a comparable revenue sharing model as well. This approach would ensure future revenue created from the smart city projects benefit Torontonians directly through the City's projects and services. Moreover, the establishment of a Patent Office at the City could help it foster innovation internally and tap into a new source of revenue for city-building projects.

This conversation and ultimate approach can also help inform the federal government's IP Strategy, which is meant to maximize the protection and access to IP for Canadian businesses, as well as reform legislation related to IP.

## Conclusion

The Toronto Public Library is an institution regulated by provincial law, with a strong reputation for sound information management and data savvy, a keen sense of public mission, and a mandate broad enough to accommodate the public interest without crowding out legitimate economic and business opportunities. Designating a respected and neutral civic institution to create a Data Hub for public realm IoT smart city projects also serves another purpose: city-building. It is a policy approach that anticipates the future institutional needs of the information-powered city.

The Board believes in investments that increase Toronto's global competitiveness and supports the hard work of Waterfront Toronto's directors, advisors, staff and partners to develop the Waterfront and bring an innovative proposal like Quayside to Toronto.

But the Board also believes that all parties' interests will be served better if final oversight, regulation of precedent-setting data governance and intellectual property policy questions are resolved by an explicitly public agency with a long-term mandate.

Other organizations and participants in this debate may offer other alternatives, which the Board is open to supporting if they align with the principles outlined in this report: a neutral third-party data governance model, enhanced and democratically-accountable enforcement mechanism, and sharing the financial benefits of IP commercialization with the public. The Board presents this proposal in the spirit of finding common ground and identifying a path that can give these important conversations the greatest chance of reaching a successful, widely-supported outcome that sets Toronto up for success in the knowledge economy, while becoming a leader in protecting personal privacy.