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Design Review Panel

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June 20, 2018

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# Quayside

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## For Information



SIDE  
WALK  
LABS



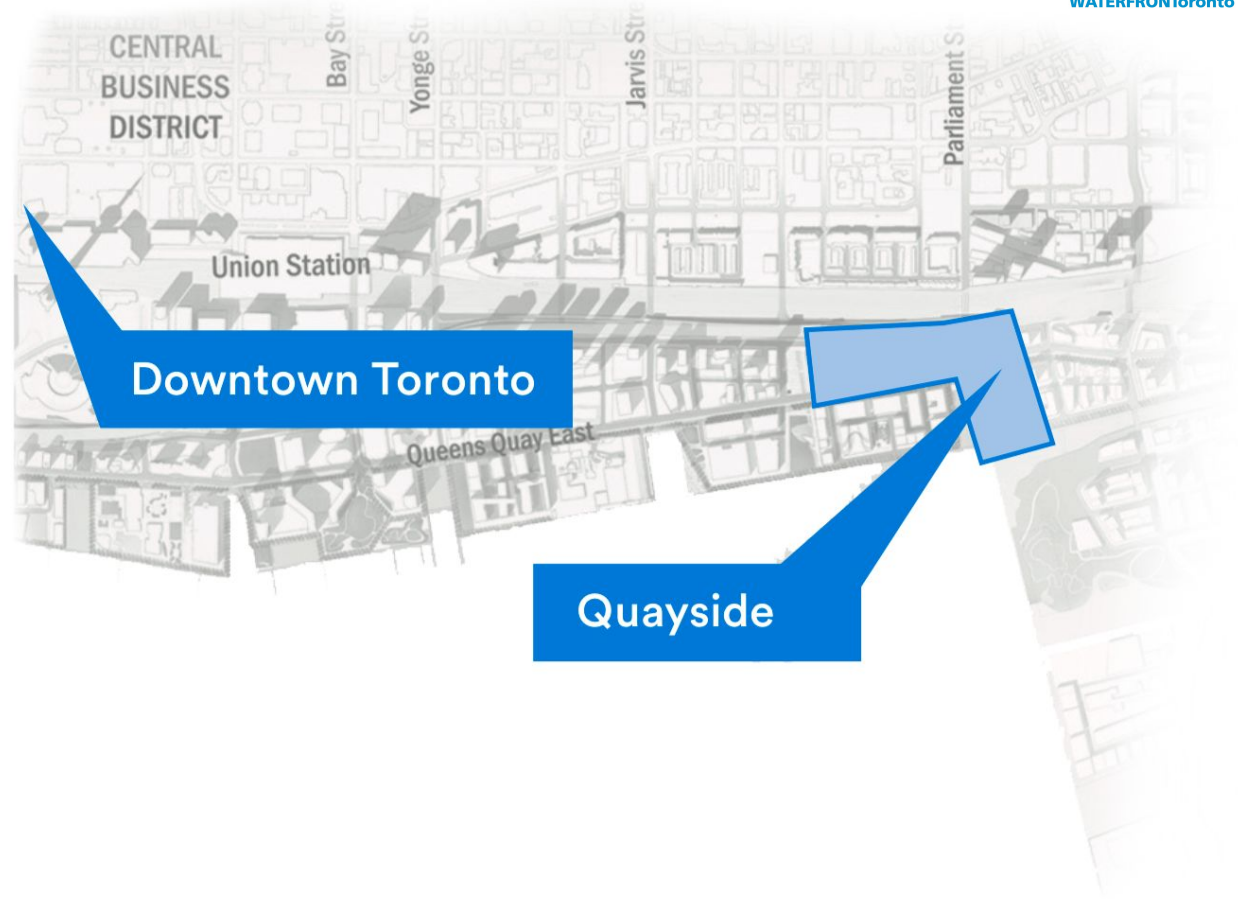
**Aaron Barter**  
Innovation & Sustainability Manager  
Waterfront Toronto

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**Steven Turell**  
Associate Director, Development  
Sidewalk Labs

# Quayside

A new type  
of mixed-use,  
complete  
community



# Quayside

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Leveraging Quayside  
to begin something  
transformational

OUR

## Bold Vision

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**Quayside could become a global exemplar for urban innovation**

**THE FUTURE** Focused on sustainability, resilience, affordable housing, transit, building innovation, and economic opportunity.

Ideas piloted at Quayside could be brought to scale across the waterfront, replicated in neighborhoods throughout Toronto — and, ideally, be adopted by cities around the world.

# Quayside

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A new type  
of mixed-use,  
complete  
community



WATERFRONTToronto

Finding a

# Partner

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Bringing this idea  
to life required  
a different kind  
of partner

## What We Looked For

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### INNOVATION AND FUNDING PARTNER

Demonstrated expertise in the integration of real estate, city-building, and technology.

Ambition to create a new kind of place with global impact — and willingness to invest in the idea.

# Transformational Goals

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SUSTAINABILITY, RESILIENCE  
AND URBAN INNOVATION



COMPLETE  
COMMUNITIES



ECONOMIC DEVELOPMENT  
AND PROSPERITY



PARTNERSHIP AND  
INVESTMENT



Waterfront Toronto sought a **new partner with innovation** ingrained in its culture and several priorities at the heart of its vision

# Innovation + Funding Partner

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**WATERFRONT**Toronto





## ABOUT US

# Who We Are

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**Sidewalk Labs is reimagining cities to improve quality of life.**

**Growing cities face many challenges. Longer commutes. Higher rents. Fewer opportunities.**

**New technology can help, but people can't afford to wait for digital advances to transform the urban environment.**

**So we're creating a new type of place to accelerate urban innovation and serve as a beacon for cities around the world.**

# Sidewalk Labs' Mission

## Sidewalk Labs May Build a High-Tech City District From Scratch in Toronto

BY KELSEY E. THOMAS | MAY 9, 2017



The Toronto waterfront (Photo by Alex Shutin)

Downtown Toronto could be getting a “smart city” development from Sidewalk Labs, a subsidiary of Google’s parent company Alphabet, Bloomberg Technology reports.

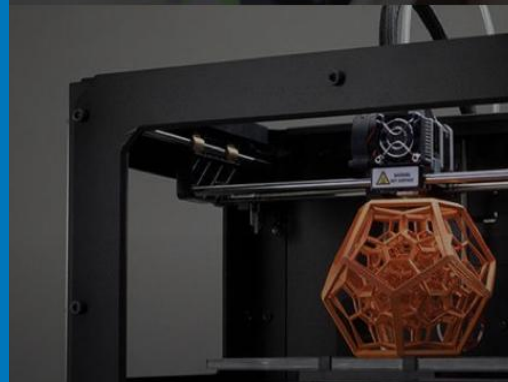
Sidewalk Labs responded to the city’s request for proposals to develop a 12-acre strip, and may seize the opportunity to fulfill its ambition of creating a smart city hub from scratch. Details of the proposal are private — and Bloomberg’s article has few specifics — but two people familiar with the plans told the news outlet that the bid fits with the company’s ambitions.





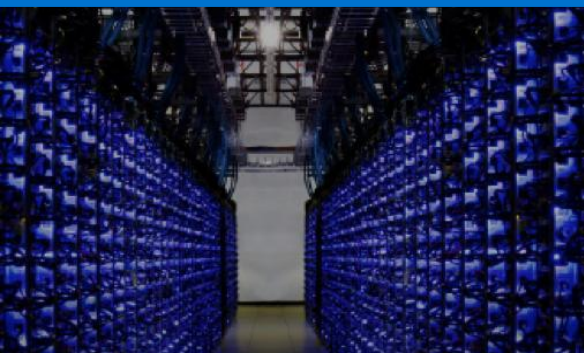
## Ubiquitous Connectivity

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## Digital Fabrication

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## Inexpensive Computing

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## Accessibility

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## Construction Technologies

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## Sensor Technology

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# Sidewalk Labs' Journey

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**STUDIED EVERY PRIOR "SMART CITIES" ATTEMPT**

**BUILT A TEAM** specifically constituted to bridge the urbanist/technologist divide

**CONVENED** working groups with the world's foremost experts

**FOLLOWING EXTENSIVE FEASIBILITY STUDIES,** Sidewalk Labs concluded the best way to bring urban design and digital technology together to effect a step-change in city life was through **district-scale innovation in a largely unbuilt urban environment.**



# Potential for step-change improvements to quality of life

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**-14%**

Cost of Living

**1 Hour**

Saved Per Day

**+30%**

Green Space

**+10%**

Labour Force Participation Rate

**-67%**

Greenhouse Gas Emissions

**2-3x**

Civic Engagement + Volunteering Rates

**Vision Zero**

Fatality Rate

SIDE  
WALK  
LABS

# Sidewalk Toronto Partnership



SEP 2017	OCT 2017	SPAN OF 2018	Early 2019
Award Sidewalk Labs Partnership.	Waterfront Toronto and Sidewalk Labs commit to developing the plan together; Sidewalk Toronto created.	<p><b>Planning and public consultation on the Master Innovation and Development Plan (the Plan)</b>, the document describing exactly what we think this place could be.</p> <p>The SWL/WT <b>Plan Development Agreement</b> will guide this effort.</p> <div data-bbox="693 609 1514 976" data-label="Image">A large, light blue outline of the year "2018" centered within a white rectangular box with a thin grey border.</div>	<p>Stakeholder approvals (boards &amp; governments).</p> <p>City of Toronto report on Plan.</p>

# Building the Plan Together

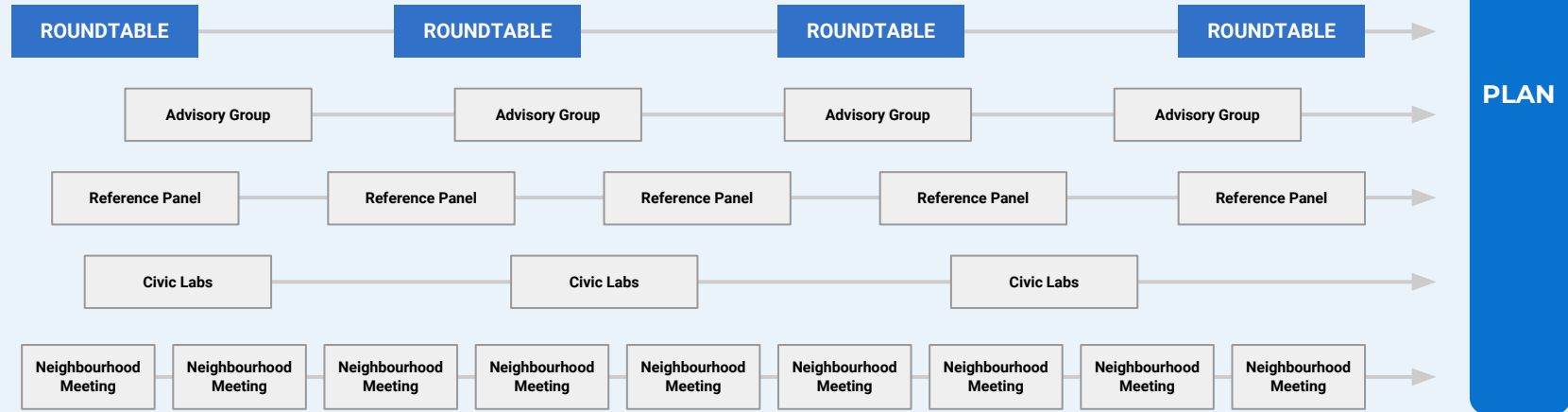


## 2018

Many different ways to get involved (see examples below)

Nothing should be a surprise at the end

Ongoing engagement with governments and stakeholders







# Core Principles

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## **Not tech for tech's sake**

We believe in the power of technology to improve quality of life in cities, but it must drive outcomes.

## **We respect privacy**

It is embedded into everything we do.

## **We believe in open standards**

Our vision is to have Quayside be a platform for innovation for everyone: governments, researchers, developers, and the general public.

## **Diversity makes us stronger**

We are committed to diversity and inclusion. Quayside will only work if it represents the population in the Greater Toronto Area.

## **We cannot do this alone**

This project will only proceed with the support and confidence of our government partners and the public. That's why we have to do this together.

## What we heard the community cares about

# Engagement



- Well-being and community health
- People-centred planning
- Public transit and personal mobility
- Sustainable, resilient, climate-positive development
- Diversity and inclusion
- Housing quality and affordability
- Data-informed decision-making
- Privacy and data governance
- Greenspace, recreation and leisure
- Engaged communities
- Entrepreneurship and innovation



# Our Vision



Organized our joint team around **working groups**, which collectively represent the themes that matter most to the community

We are beginning to build on the years of planning work already done by the City of Toronto and Waterfront Toronto.

**Targeted outcomes inform every step of our planning**

## SUSTAINABILITY

A truly climate positive community

## MOBILITY

A competitive, safer alternative to the private automobile for every trip

## PUBLIC REALM

A public realm for the entire region that is delightful and vibrant year-round

## BUILDINGS

A built environment that is more usable, efficient and affordable

## COMMUNITY & CITY SERVICES

A close-knit, healthy community with seamless access to vital daily services

## DIGITAL PLATFORM

Open digital infrastructure that inspires innovation

## HOUSING AFFORDABILITY

Inclusive, affordable communities for people of all ages, abilities, and means

## PRIVACY & DATA GOVERNANCE

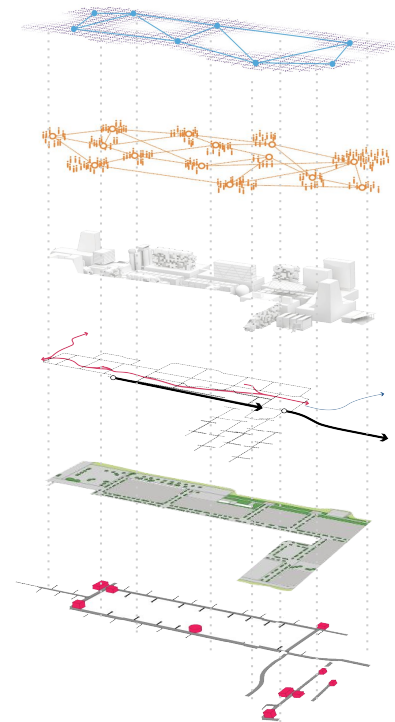
A new standard for transparent, accountable, and responsible data use



# The Sidewalk Toronto approach to innovation

- Cities are—and always have been—platforms upon which millions build, over decades and centuries.
- Sidewalk Toronto aims to update that platform for the 21st century, and create a combination of the digital and physical working together as one.
- The digital layer will be a new and transformative element that enables connectivity, access, and data integration across the components of the city's physical layer.
- Digital technology allows for new modes of service delivery, building innovation, mobility services, public realm design, and infrastructure systems. Each of these will be reimaged.

# The City as a Platform



DIGITAL LAYER

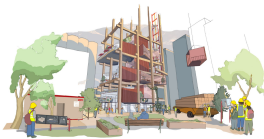
PHYSICAL LAYER

# The City as a Platform

The Sidewalk Toronto approach to innovation



## BUILT ENVIRONMENT



A built environment that is more usable, efficient, and affordable

## MOBILITY



A competitive, safer alternative to the private automobile for every trip

## PUBLIC REALM



A public realm for the entire region that is delightful and vibrant year-round

## SUSTAINABILITY



A truly climate positive community

## COMMUNITY



A close-knit, healthy community with seamless access to vital daily services

## DIGITAL LAYER



Open digital infrastructure that inspires innovation and supports realization of the physical pillars

## A truly climate positive community

# Sustainability



By reducing building energy use, recovering and reusing waste energy, generating onsite renewable energy, and transforming organic waste into energy we can achieve new levels of environmental sustainability while maintaining reasonable costs.

- Building Standards
- Active Demand Management
- Advanced Microgrid
- Thermal Grid
- Smart Disposal Chain
- Utility Channels



## Forging the path to climate positive

Low Load Buildings

Active Energy Management

Thermal Grid

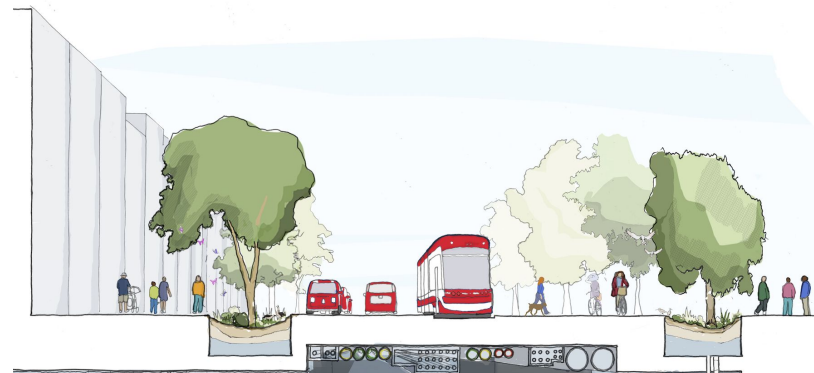
Advanced Electrical Grid

Solid Waste Management

Active Water Management

Flexible Utilities

- Achieve unprecedented levels of environmental sustainability while maintaining reasonable costs.
- Develop low energy buildings that achieve their predicted performance
- Capture and utilize waste and renewable heat
- Maximize onsite renewable energy potential
- Divert all organic and recyclable waste from landfill
- Actively manage water (including stormwater)
- Make infrastructure accessible and easy to upgrade and sensor



## A public realm that puts people first and is vibrant year-round

A flexible public realm will leverage the city's waterfront and industrial heritage while integrating technology, urban design, policy innovation, and play to **enable more uses, more of the time, by and for a large and diverse community.**

- Innovative outdoor uses
- Weather mitigation
- Streets that put people first
- Community programmed space
- Flexible retail, cultural and community amenities

# Public Realm





## MORE TIME SPENT OUTDOORS, TOGETHER

Foster happy and healthier communities through a vibrant, porous public realm that gives people new levels of agency over their environment

### MORE COMMUNITY SPACE

Create a public realm network that gives everyone convenient access to green spaces and shared amenities, ranging from small community parks to large plazas to bookable community rooms

### MORE USES

Expand what's possible for all ages and abilities on water and land, emphasizing a diverse spread of uses that foster serendipity and take advantage of porous indoor/outdoor, land/water spaces

### MORE HOURS, MORE SEASONS

Create flexible infrastructure that keeps the public realm vibrant ~18 hrs/day and usable year round, from the heat of the summer to the depths of the winter

### MORE COMMUNITY EMPOWERMENT

Welcome a diverse community of residents, Torontonians, and visitors from all walks of life, and empower them to be creators and stewards of the public realm

# A mobility system that is safer and more convenient than the private car at much lower cost

Through traditional transit expansions; shared, self-driving vehicles; and dynamic traffic-management technology, we can deliver a **transportation system that prioritizes walking, biking, and shared rides, and that reduces congestion.**

- Traditional Transit Expansions
- Self-Driving Taxibots
- Responsive Traffic Signals
- Improved Cycling Infrastructure
- Shared Mobility Options and Reduced Private Car Use

## Mobility



## A seamless and delightful resident experience that enables a close-knit community

We can enable a personalized and seamless interface between residents and service delivery and foster a strong, close-knit community.

- Community Hub
- Healthcare delivery
- Workforce, education, and childcare
- Libraries
- Responsive resident relationship management
- Service delivery
- Community engagement

# Community and City Services



# Our Vision: Enabling city and community services innovation through partnership



**Sidewalk Toronto does not intend to deliver city and community services in Quayside; but rather seeks to enable existing local service providers and residents to advance their efforts and priorities in the areas of:**

- Health + Wellness
- Learning and Career Opportunities
- Civic Engagement

**Government agencies**

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**Community partners**

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**Civic groups**

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**Industry**

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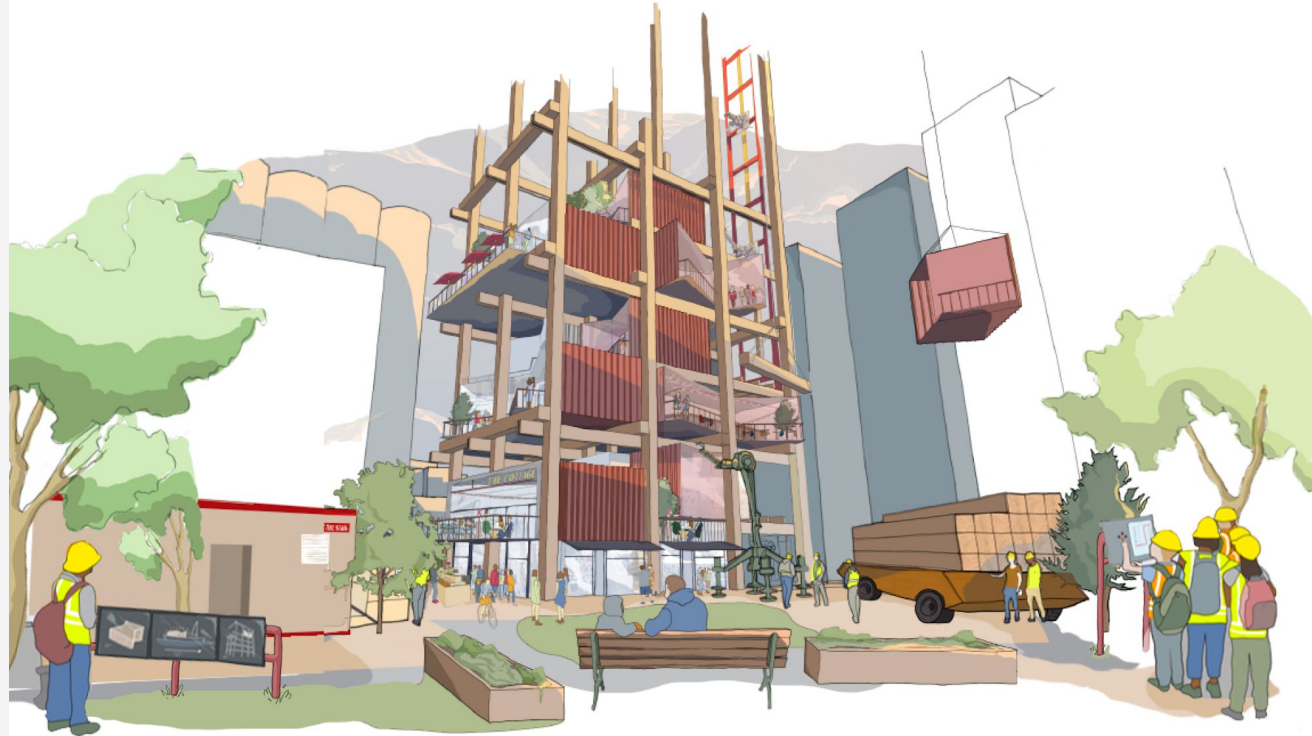
**Entrepreneurs**

## Housing and real estate that is more efficient and far more affordable

# Affordability



- Minimum 20% units as affordable rental
- Consider a full spectrum of housing needs
- Innovative financing structures
- New construction methods, more sustainable materials, and adaptable building designs enable mixed-use, walkable neighborhoods that reduce the cost of housing and retail space and increase efficiency and affordability.



# Housing Affordability Goals



- **Meet or exceed** the affordability requirements on the waterfront
- **Create a truly mixed income community**, at both the neighborhood and building level. Giving Torontonians at all income levels have an opportunity to live on the waterfront in an inclusive community.
- Work with **local housing groups** and **leverage existing programs** at the Municipal, Provincial, and Federal levels, especially to accommodate those with the greatest need.
- Add to Toronto's **purpose built rental** supply, with a focus on serving a diverse population including the **“missing middle.”**
- Explore new **typology and tenure models** that increase access and affordability while providing meaningfully better quality of life.
- Develop vehicles that combine private and public sector sources in order to create a deeper capital stack for the development of affordable housing; including a dedicated funding stream for housing.

# Housing Objectives



Develop a toolkit, serving as a global example for creating affordable, diverse, mixed income, and multigenerational communities, composed of innovative programs, policies, business models, technology and typologies, and existing programs that make housing more available and affordable for Torontonians.

- **Address** the full spectrum of housing need in the Toronto market
- **Incentivize** the creation of new affordable units through policy
- **Leverage** dedicated housing dollars and the private sector to produce more affordable housing

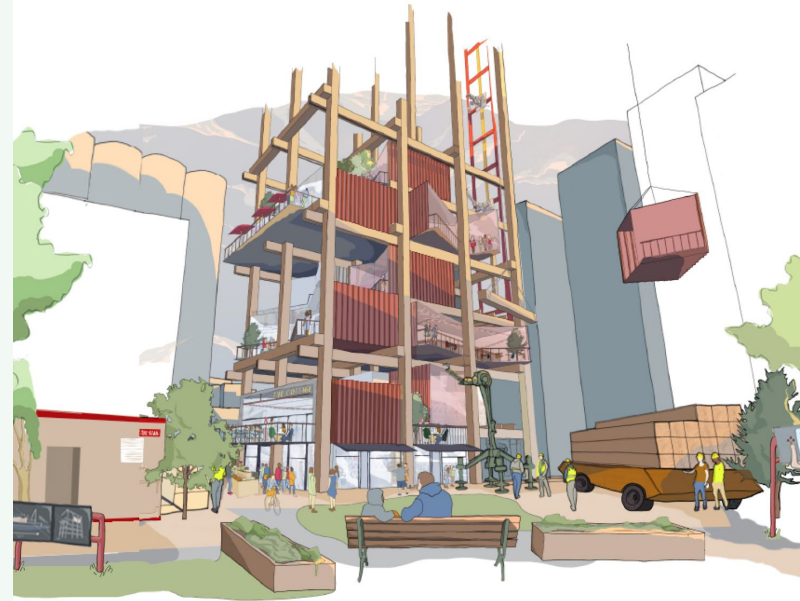
**Ultimately creating a housing program that provides greater housing choice to Torontonians on the waterfront.**

# Buildings

A built environment that is more usable, efficient and affordable

**We are exploring ways to:**

- **Increase Adaptability**  
Create structures that are more responsive to the needs of its users over time, both on Day 1 and years later
- **Reduce Cost**  
Reduce the cost of construction by leveraging scale through a manufactured approach to buildings
- **Enable Sustainability and Wellness**  
Build at the highest sustainability standard, which positively impacts the environment, lowers cost of utilities, and improves occupant well-being
- **Design Excellence**  
Innovative building design and architectural excellence on the waterfront





# Buildings



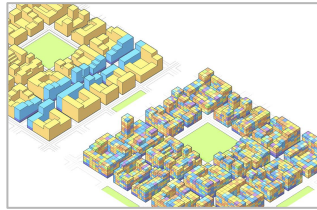
## Radical Mixed-Use

Flexible structures enable radical mixed-use to occur more quickly and at lower cost—responding not only to market demand today but future needs



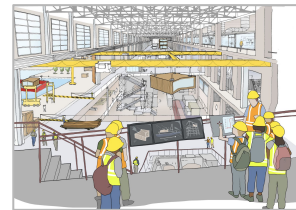
## Flexible Typologies

Flexible spaces enable an adaptable mix of buildings and uses, helping a complete community meet changing needs for affordable housing options and vibrant amenities



## Regulatory Frameworks

Outcome-based code is a new set of simplified, highly responsive rules for real-time monitoring, enabling truly mixed-use development to occur safely



## Construction Technologies

Digitized construction modeling, robotic construction, on- and off-site automation, and 3D printing can lower construction costs and compress delivery times



## Material Innovation

Advanced, sustainable materials can improve design flexibility and affordability. In Toronto, we are focusing on locally-sourced tall timber to achieve cost savings, increased speed of construction, and reduced environmental impact



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# Sidewalk Toronto

## Privacy & Data Governance

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# Privacy & Data Governance



We will set a new standard for transparent, accountable, and responsible data use

## We are committed to:

- **Leading by example** with clear and consistent policies for the handling of personal information
- **Using data** to improve quality of life and benefit the public
- **Not using or selling personal information** for advertising purposes
- **Embedding Privacy by Design** into everything we do
- **Being part** of the open data community, and promoting the use of open standards
- **Compliance** with all Canadian laws and regulations

## We will also explore:

- **Innovative governance models**, such as a data trust
- **New ways** to involve the public in decisions about privacy + data use

We are working closely with members of our advisory body and leading Canadian privacy and data governance experts on our work.

# Responsible Data Use Policy Framework



## Responsible Data Use Policy Framework

1 May 2018  
Version 0.2



### Responsible Data Use

Our early work with these advisors, together with feedback gathered as part of the Sidewalk Toronto public engagement process, has led to the development of a set of principles that will inform decisions on how the community's data and information is responsibly collected, stored, used,

### Responsible Data Use

### Responsible Data Use Policy Framework

Version 0.2

Sidewalk Toronto is a joint effort by Waterfront Toronto and Sidewalk Labs to create a new kind of complete community on Toronto's waterfront that combines cutting-edge technology and forward-thinking urban design to help address major challenges of urban growth, from sustainability to affordability to economic opportunity. We believe Sidewalk Toronto can provide a global model for future cities to build on.

Data has an important part to play in bringing this vision to life. First, data can power tools that improve the day-to-day operation of a neighbourhood and make it more responsive to local needs. Second, access to data can enable the community—including researchers, startups, civic organisations, and residents—to develop new tools and services for itself, creating a virtuous cycle of urban innovation.

Cities—and businesses operating in cities—have long collected data to help address challenges and provide better services, from mapping the spread of disease to feeding noise complaints via 311 to monitoring public safety with closed-circuit cameras. Often, these efforts happen in the absence of a meaningful public dialogue or policy framework, leaving people with valid concerns about the impact on their personal privacy.

So while privacy concerns around urban data are not new, we believe that Sidewalk Toronto has a unique opportunity—and a core responsibility—to innovate not just on how data will be used, but on how its use will be governed.

#### Process and Guiding Principles

The Sidewalk Toronto planning process will result in a "Master Innovation and Development Plan," released at the end of 2018, that will lay out detailed programmatic plans for the waterfront. One important component of the plan will be a Responsible Data Use Policy, which will govern the collection and use of data.

To help develop this policy, and to receive guidance on a full range of issues relating to responsible data use, Sidewalk Toronto has convened a Data Governance Advisory Working Group made up of independent experts and community representatives. This group will work alongside other project advisors, including Dr. Amy Cranak, three-term Information and Privacy Commissioner of Ontario; Charal Barnier, former Interim Privacy Commissioner of Canada; and Waterfront Toronto's Digital Strategy Advisory Panel.

Sidewalk Toronto's Responsible Data Use Policy will build on the strong foundation established by Canadian privacy laws and aim to realise their spirit and content more fully than any other project to date, as well as building on recent recommendations by federal and provincial Canadian privacy regulators. It will be a product of ongoing, comprehensive engagement and consultation with Canadian experts, stakeholders, and the public—a living document that evolves with the project itself.

### Commitments and Open Questions

Our collaborative work on the first of these areas, privacy, has advanced sufficiently for us to make a number of commitments. Our work in the other areas is still in progress and will be informed by some critical questions the public and our expert

should be purposeful, make benefit that we are striving for of having data.

that we are collecting and why, as we use, and communicate

romising personal privacy, we if Sidewalk Toronto opens and n and entrepreneurship.

engage the community on from the community as

to trust that our projects, needs in mind. Having good che of trust is therefore integral

responsible data use will apply rivacy as a fundamental

ics and public feedback, we se Policy will have four main

personal information

ownership, and storage of data.

broadly and on what terms.

ersonal information is collected, ons may apply to different kinds (ividuals can be identified from llement associate guidelines luding data that is not personal

akes the following commitments: id why their personal information so in a way that is proactive,

we do from the very start,

ividual identification, you will mation is used. Otherwise, (be "de-identified" by default— to any individual.

iduals and honour their choices. isk assessments to help assure l and adequately addressed in the

lications of key initiatives in Advisory Working Group d parties, or use it ourselves

use to explore several questions

to data collected in the public t/interactions to help improve

of personal information that

o of stakeholders—including ther understand the benefits



# Waterfront Toronto

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Digital Strategy Advisory Panel

# Our panelists



- **Alaina Aston** Vice President, Data Management & Governance, Personal & Commercial Banking, RBC
- **Dr. Andrew Clement** Professor Emeritus, Faculty of Information, Coordinator, Information Policy Research Program, University of Toronto
- **Dave Dame** Agile Leader, Digital Factory, Scotiabank
- **Charles Finley** Global Director of Marketing & Communications, IBI Group, Co-Founder & Chair of Code for Canada
- **Dr. Michael Geist** Law Professor, Canada Research Chair in Internet and E-commerce Law, University of Ottawa
- **Darin Graham** Head of Canadian AI Operations, Samsung
- **Kurtis McBride** CEO & Co-founder, Moivision Technologies Incorporated, and Co-founder, Catalyst137
- **Saadia Muzaffar** Founder, TechGirls Canada, and Co-founder, Tech Reset Canada
- **Dr. Carlo Ratti** Director, MIT Senseable City Lab, and Founding Partner, Carlo Ratti Associati
- **Dr. Pamela Robinson** Associate Professor, School of Urban & Regional Planning and Associate Dean, Graduate Studies and Strategic Initiatives, Faculty of Community Services, Ryerson University
- **John Ruffolo** Chief Executive Officer, OMERS Ventures
- **Dr. Teresa Scassa** Canada Research Chair in Information Law & Policy, University of Ottawa, Faculty of Law
- **Jutta Treviranus** Director and Professor at Inclusive Design Research Centre, OCAD University
- **Kevin Tuer** Managing Director, Canada's Open Data Exchange
- **Mark Wilson** former IBM Executive and former Chair, Waterfront Toronto



thank you!

