

# Design Review Panel

Waterfront Toronto Quayside Master Innovation Development Plan Evaluation

March 25, 2020

# Agenda



10 mins Project Introduction

**Meg Davis**

## **Pillar Presentations on the Technical Evaluation**

10 mins Complete Communities and Inclusivity

**Leslie Gash, Caroline Kim**

10 mins Sustainability, Resilience and Climate Positive

**Aaron Barter, Rei Tasaka**

10 mins New Mobility

**Pina Mallozzi, Alex Mereu**

10 mins Economic Development and Prosperity

**Kristina Verner, Vance Lockton**

15 mins Question and Answer

15 mins Comments

**DRAFT**

# Where we are today



Today



# Challenges facing growing cities like Toronto



## Climate Change

- Extreme weather events
- Greenhouse Gas Emissions
- Household waste



## Affordability

- Singles and families
- All stages of life



## Jobs

- New economy
- Future proofed
- Resilient
- Build human capital



## Congestion

- Traffic congestion
- Emissions
- Road trauma

# Quayside



-  QUAYSIDE
-  DESIGNATED WATERFRONT AREA

# Multiple voices with a range of views



# What happens next

Address key questions and listen to additional voices and report to Board



**March – May**

- *Clarify & Negotiate*

**May 20**

- *Board Vote on Innovation Plan*

**Yes:**

7 months due diligence to firm up the agreement

**No:**

No further work with SWL New RFP to implement some ideas from explorations to date

**June - Dec**

**2021**

- *City of Toronto Public Consultations & Council Vote (Date TBD)*
- *Prepare Implementation Agreements*

- *Municipal Development Application*

# Key questions to answer to inform a Yes or No

1. Do the solutions raise the bar on meeting urban challenges?
2. Does the development plan align with the East Bayfront and Keating Channel Precinct Plans?
3. Are we taking a comprehensive approach to managing data collection and use?
4. Are there sufficient controls to address implementation and partner risks?
5. Is Sidewalk Labs contributing enough to make the project work?
6. Is the proposed public investment in the solutions appropriate?



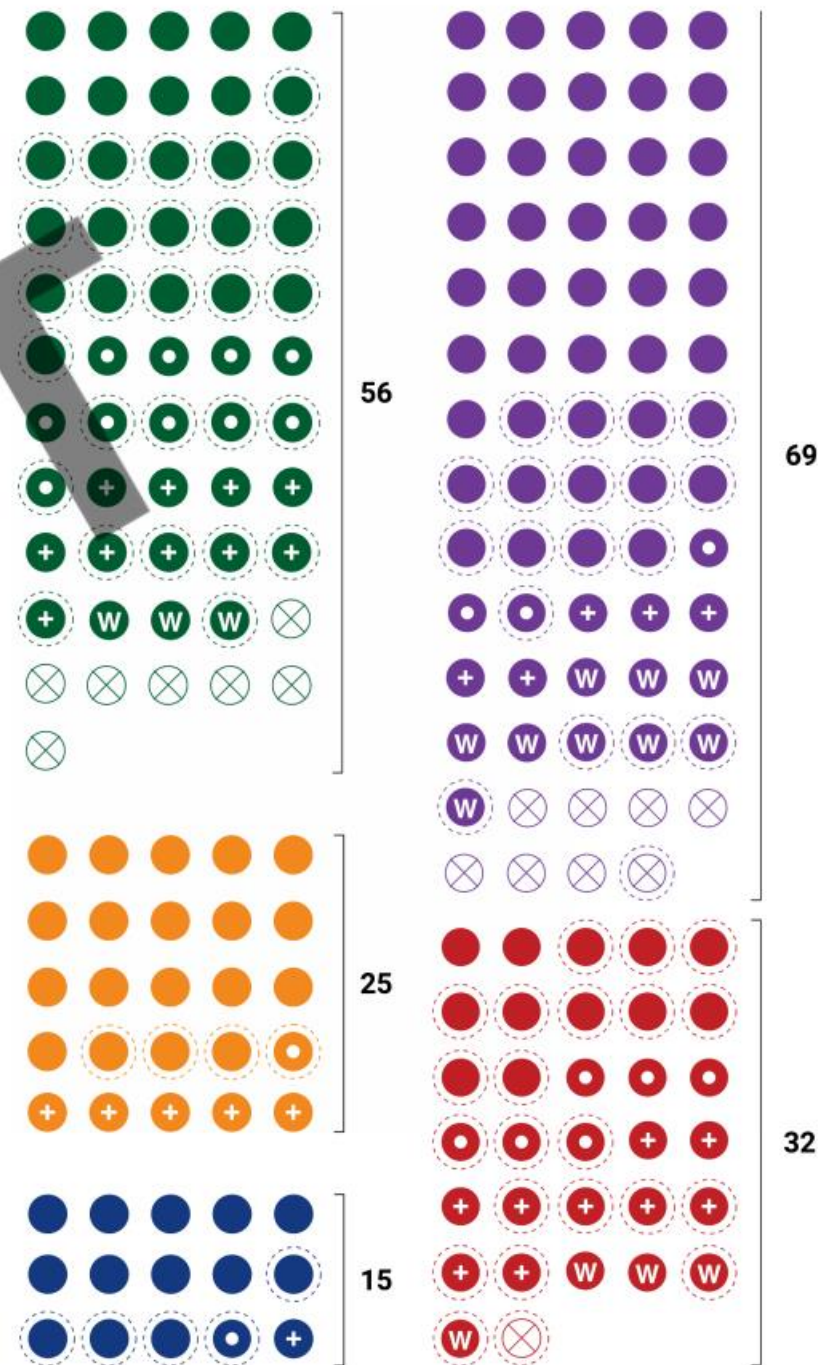


# Q1: Do the solutions raise the bar on meeting urban challenges? Yes

The solutions were categorized as follows:

-  Support, Private funding/delivery 92
-  Support, Advocate for Policy/Regulatory Reform 17
-  Support, Advocate for Government Funding 24
-  Support, Waterfront Toronto Investment 11
-  Non-support 16

 59 are digitally enabled



Support for these solutions does not mean Waterfront Toronto has approved moving ahead with the project or a partnership with Sidewalk Labs

Support for certain solutions may change based on feedback from the public, support from Sidewalk, public policy priorities, and support from governments.

# Q2: Does the development plan align with the East Bayfront and Keating Channel precinct plans? Yes

## Keating Channel Precinct Plan

Keating Channel  
Toronto, Ontario

May 2010



- Information, communications, technology employers & jobs
- Over 20% affordable housing
- Subject to statutory development application processes and City of Toronto consultation
- Return to Design Review Panel

## Q3: Are we taking a comprehensive approach to managing data collection and use? Yes



If the project moves forward, all solutions will:

1. Comply with existing and future legislative and regulatory requirements
2. Comply with Waterfront Toronto Digital Principles & emerging Intelligent Community Guidelines
3. Incorporate Privacy by Design
4. Be subject to Privacy Impact Assessments
5. Be subject to Threat Risk Assessments
6. Be subject to Algorithmic Impact Assessments
7. Requirements will be enforced by contract

## Q4: Are there sufficient controls in place to address the risks associated with the implementation of this project?

Answer is a work in progress and is subject to commercial negotiations with Sidewalk Labs. Project will only go forward if adequate controls are in place, including (but not limited to):

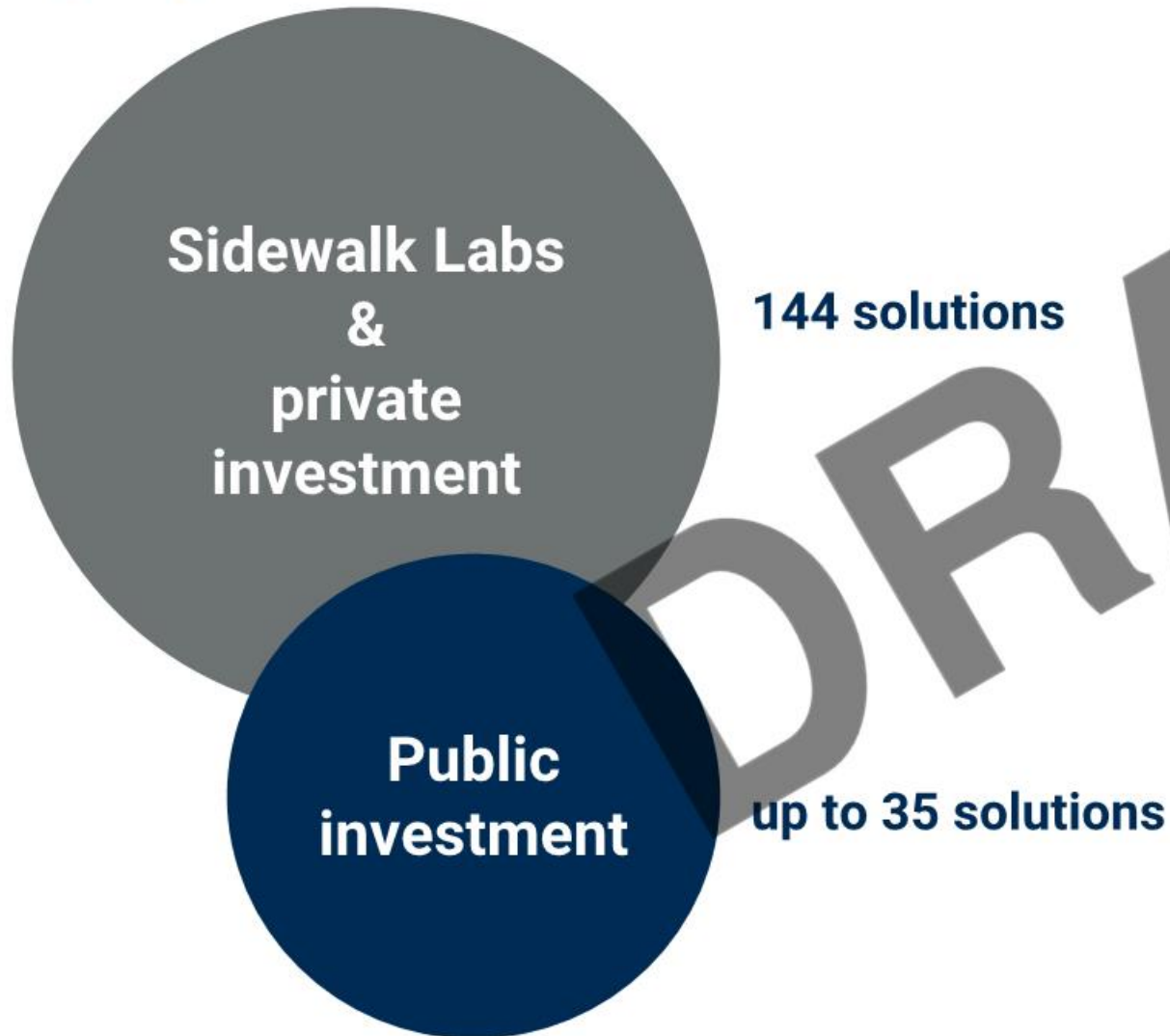
- Costs and liabilities covered should solutions fail
- Project delays due to regulatory barriers
- Controls that manage risk to Waterfront Toronto and the public should there be a change in the relationship between Sidewalk Labs and Alphabet

**Will also be informed by outcomes of preliminary Human Rights Impact Assessment**

### Possible Controls

- Annual compliance certification
- Audit rights
- IP infringement remedies
- Reserve fund for critical infrastructure
- Step in rights
- Transfer of IP rights to WT

## Q5: Is Sidewalk Labs contributing enough to make the project work?



Work in progress though private investment at Quayside will be significantly more than public investment.

### **Sidewalk Labs has committed to:**

- Design, funding & delivery of advanced infrastructure
- \$10 M for applied research for urban innovation
- \$10 M to support early-stage enterprises
- Hire 10% of construction hours from equity seeking groups
- Partnership with Ontario Teachers' Pension Plan

# Q6: Is the proposed public investment in the solutions appropriate?

Land valued at approximately **\$590 million**, proceeds from the sale could go to:



Land servicing (e.g. providing water, sewer, some streets, other infrastructure to Quayside)



Affordable housing



Environmentally-friendly solutions such as pneumatic waste and permeable pavement



Solutions improving accessibility and reliability :

- Wayfinding beacons to enhance accessibility
- Real-time digital map of the utility network
- Real-time digital 3-dimensional map of open space assets
- Environmental sensing technology

# Complete Communities and Inclusivity

**Leslie Gash** Senior Vice President, Development  
**Caroline Kim** Urban Design Project Manager for Quayside



# Addressing urban challenges

- Provide housing for a range of incomes
- Provide a variety of housing types, including for families
- Ensure neighbourhoods are inclusive for all and have community services to meet the needs of a growing population
- Increase access to high quality public open space through all seasons



# Summary of public feedback to date

## Support

### Affordable Housing

Many participants supported having affordable housing and asked if the amount proposed could be expanded.

### Social Infrastructure Space

There was an interest for more space for social services, however more clarity was needed on what would be provided. It was important to the participants that community facilities were kept open to the public and provide flexible hours to cater to different users and needs.

## Consider

### Family Units

Participants shared concerns about small unit sizes and said it is important to provide affordable family sized units.

### Public Realm

Participants expressed some support for innovations (ie. 3D Mapping and Green Wave) that could improve the quality of life and public realm experience in the area. However participants wanted to understand more detail on logistics, mechanics and implementation of proposed innovations.

# Summary of evaluation results

Each of the 69 dots represents one of the proposed solutions related to Complete Communities in Sidewalk Labs' Draft MIDP.

- There are **61 solutions** that Waterfront Toronto **supports**, including:

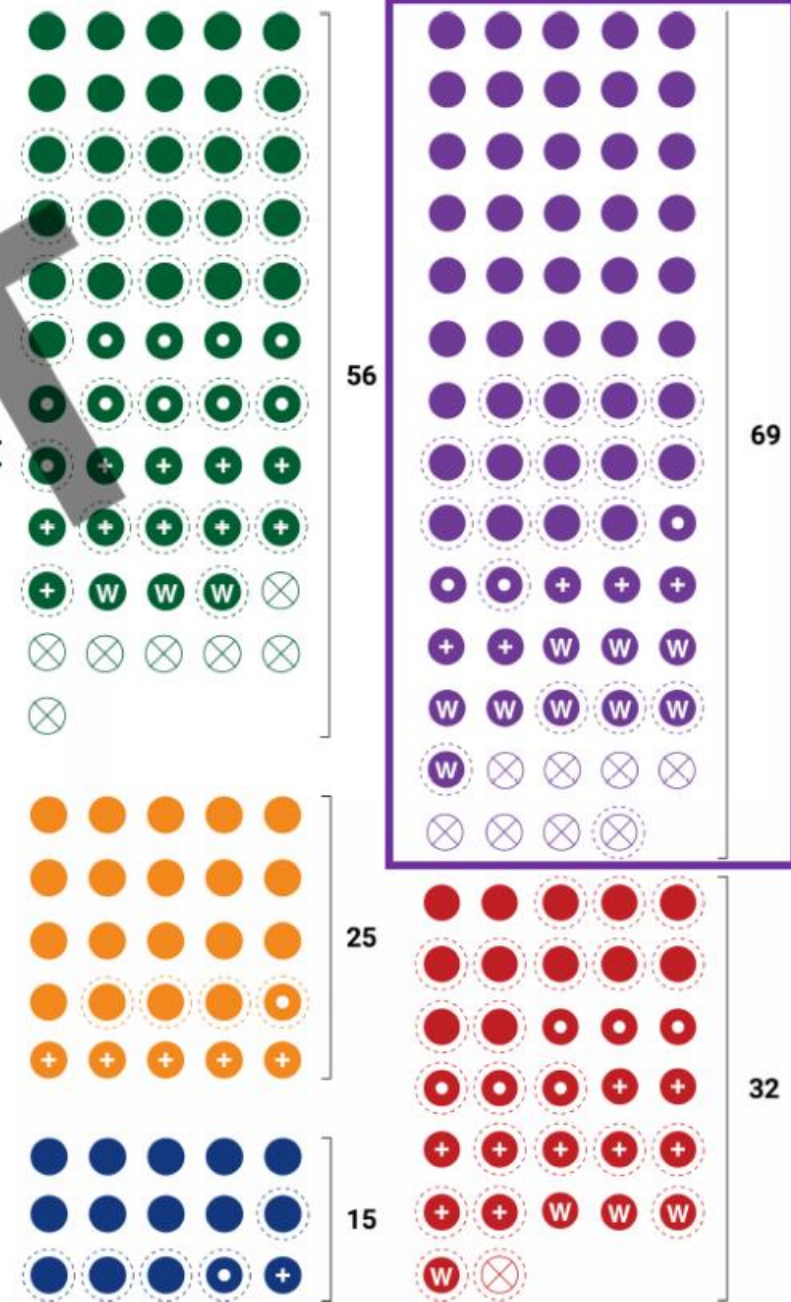
- **3 solutions** Waterfront Toronto would support and advocate for policy/regulatory change

- + **5 solutions** Waterfront Toronto would support and advocate for government funding

- W **9 solutions** Waterfront Toronto would support and invest in

- ⊗ There are **8 solutions** Waterfront Toronto **does not support**

- Indicates the **19 digitally enabled solutions**



# 20% affordable housing

*Example of solution to support  
with WT investment*



- 20% of units on Quayside will be provided within the City's definition of "Affordable Housing"
- 5% of the units provided will be deeply affordable
- A mixed income community with access to a range of housing options
- Waterfront Toronto will continue to work with Sidewalk Labs and our government partners to work through the details of the delivery of the Affordable Housing program

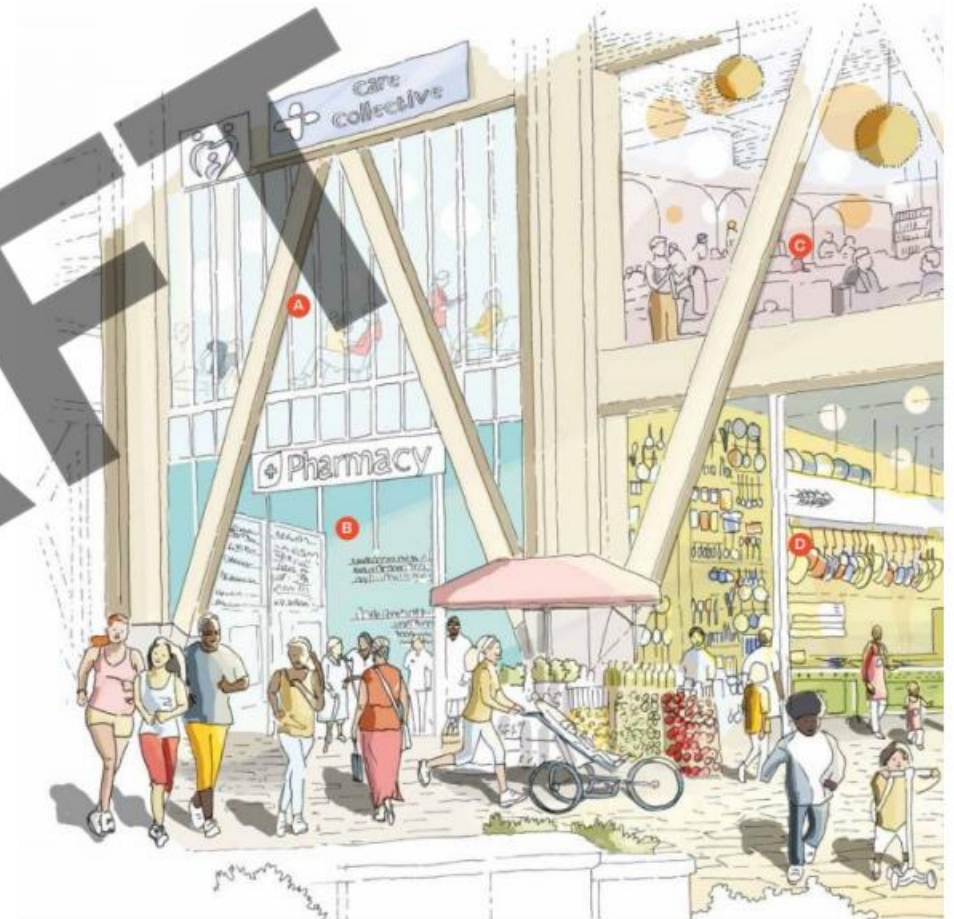


# Care Collective

*Example of solution to support,  
advocate for government funding*



- The Care Collective provides community space dedicated to meeting the diverse health and wellness needs of the community
- Location in the flexible ground floor space would allow the Care Collective to adapt to changing needs and evolving health care technologies
- Waterfront Toronto will continue to work with our government partners to plan and provide future social services



# Real time digital map of the utility network

*Example of solution to support  
with WT investment*



- A real-time digital map of the utility network and parks infrastructure that keeps an accurate record of utility locations, identifying potential conflicts to make repair work easier and quicker
- Sensors to provide alerts before utility failures, reducing disruptions caused by utility downtime
- Enable high level of maintenance at little to no additional cost to the City

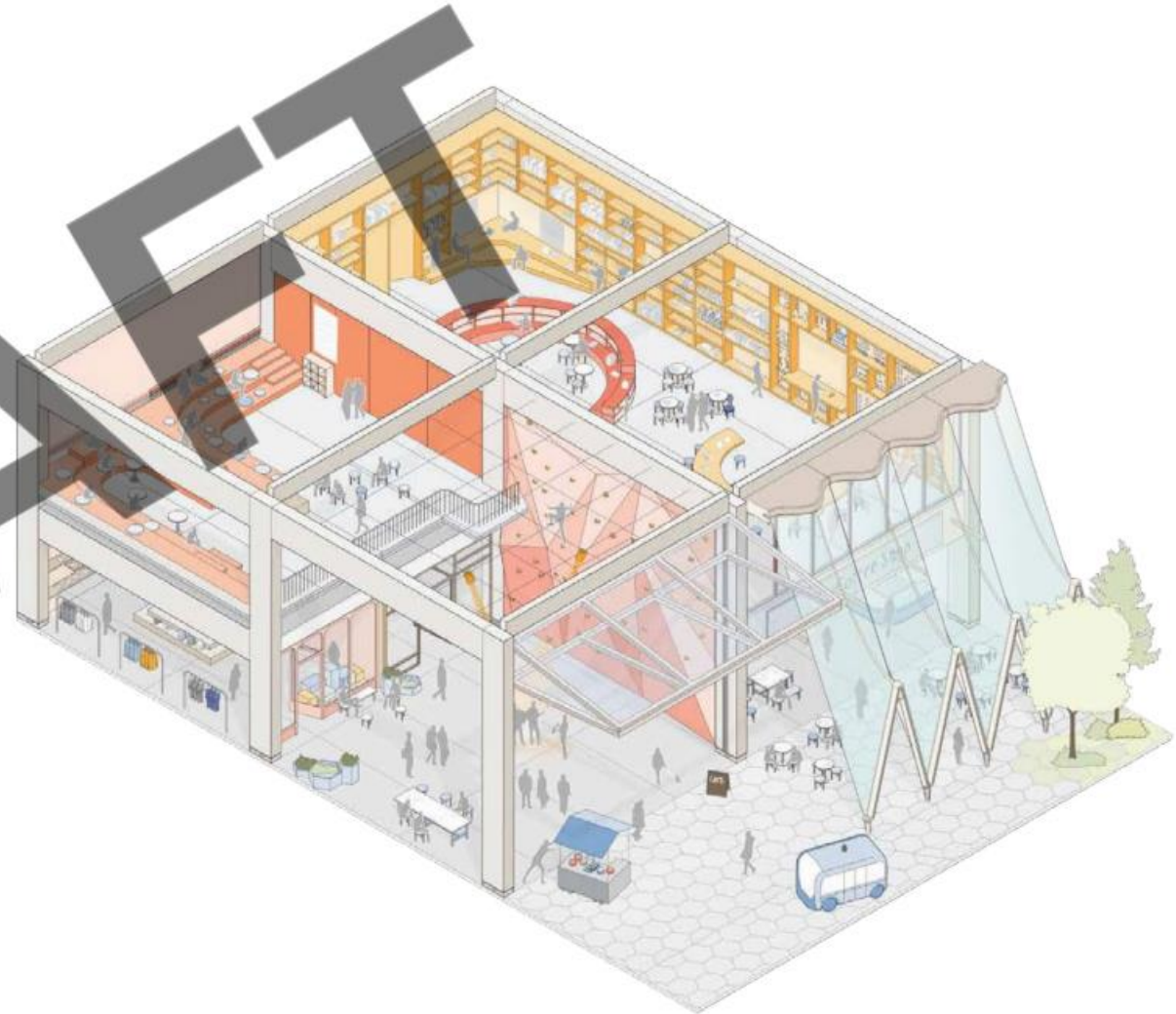


# Stoa (flexible ground floor space)

*Example of solution to support  
and advocate for policy/regulatory reform*



- Open market hall space in building ground floors for complete flexibility
- Can support a range of uses from retail to restaurants to light manufacturing in response to changing demand
- Contributes to an animated ground floor space leading to vibrant street life
- Acts as an extension of the public realm by providing open pedestrian access throughout the block in semi-conditioned spaces



# Sustainability, Resiliency, and Climate Positive Development

**Aaron Barter** Director, Innovation and Sustainability

**Rei Tasaka** Senior Urban Design Manager, Planning and Design



# Addressing urban challenges

- Decoupling urban population growth from greenhouse gas emissions, enabling Canada's target of an 80% reduction in emissions by 2050
- Enhancing resiliency of buildings and infrastructure, designed to survive and thrive in the face of climate change

*Climate Positive refers to the development of neighborhoods with below-zero annual greenhouse gas emissions, at full build-out.*



# Summary of public feedback to date

## Support

### Heating and Cooling Innovations

Discussions around use of lake water for cooling, trade-offs between geothermal/ground sourced cooling, use of heat pump technology.

### Building Automation

To advance sustainability and energy affordability goals, done in a way that respects the privacy of citizens and makes it accessible for everyone.

### Public Sector Investment

Support for public sector investments, such as Waterfront Toronto contributions towards sustainability solutions.

### Solid Waste Management

Improving recycling (i.e. a market for purchasing waste) and a preference for municipal waste collection.

## Consider

### Mass Timber Construction

Questions about potential amendments to the Ontario Building Code in order to provide tall timber buildings, with questions about fire safety in mass timber buildings.

### Sustainability of Mass Timber Construction

Questions about the sustainability of mass timber construction. In general, they felt that more clarity was needed on the metrics, and where the lumber is sourced.

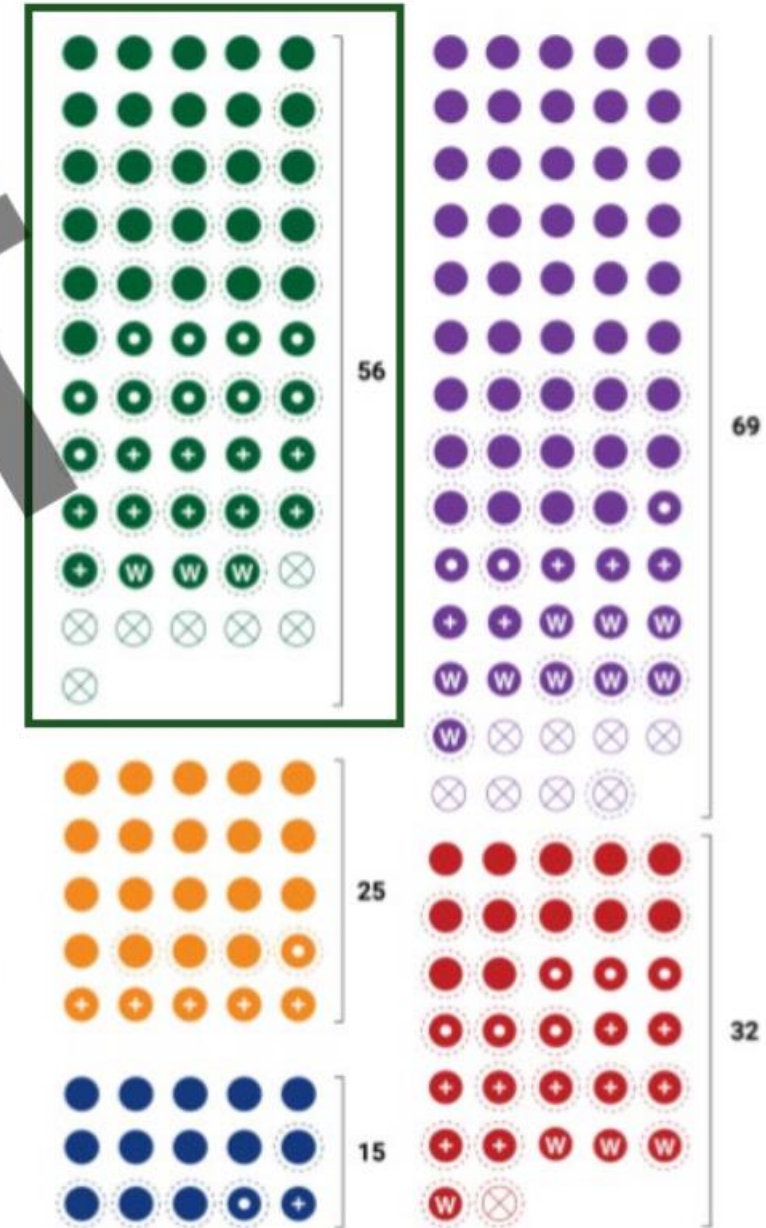
### Local Food Production

Agriculture and community gardens should be a part of the plans and suggested the latter could be on rooftops.

# Summary of evaluation results

Each of the 56 dots represents one of the proposed solutions related to Sustainability, Resiliency and Climate Positive in Sidewalk Labs' Draft MIDP.

- There are **49 solutions** Waterfront Toronto **supports** including:
  - **10 solutions** Waterfront Toronto would support and advocate for policy/regulatory change
  - ⊕ **10 solutions** Waterfront Toronto would support and advocate for government funding
  - W **3 solutions** Waterfront Toronto would support and invest in
- ⊗ There are **7 solutions** that Waterfront Toronto **does not support**
- Indicates the **28 digitally enabled solutions**

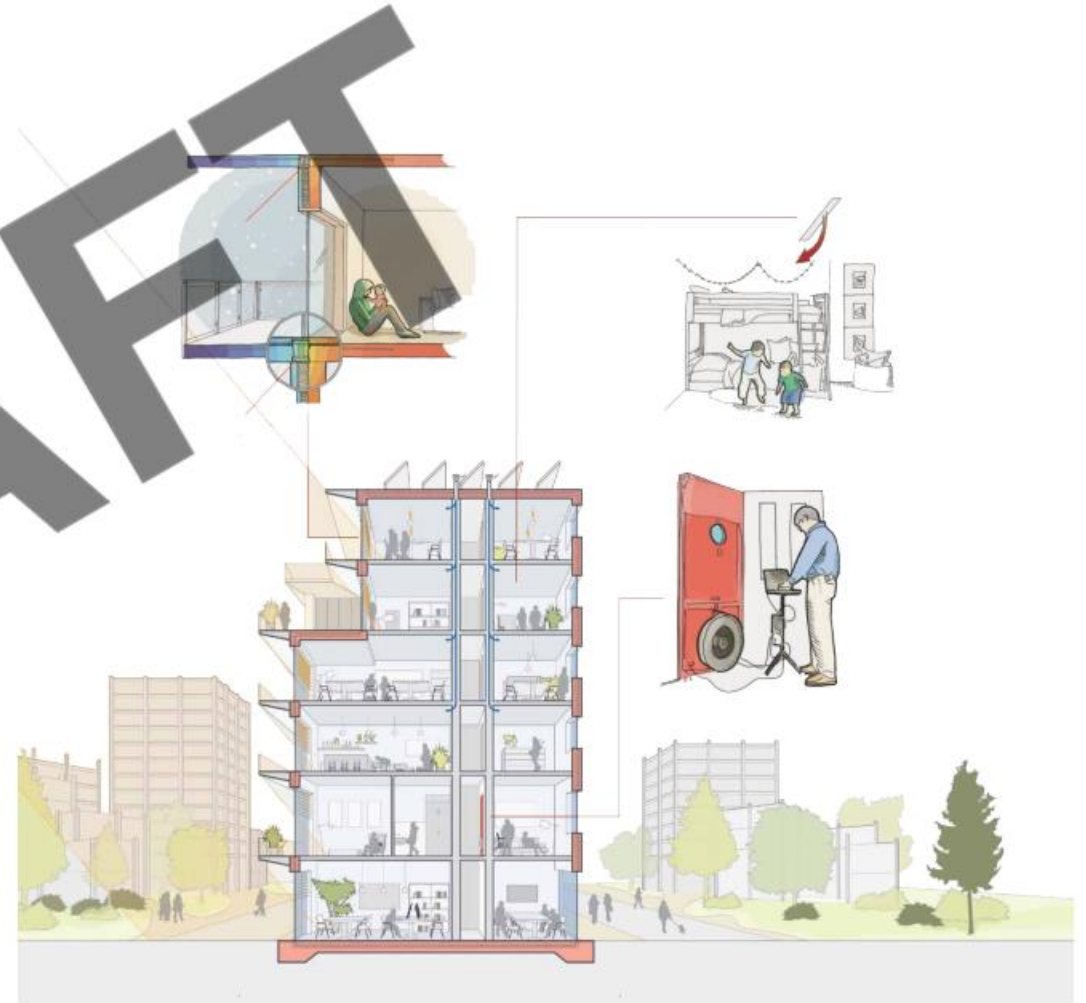


# Passive house inspired buildings

*Example of solution to support  
with WT investment*



- Nearly half of Toronto's greenhouse gas emissions are from buildings (45%)
- High-performance building envelopes critical to reducing use of natural gas
- Key solution for putting Quayside on the path towards Climate Positive
- Also more comfortable for residents, and result in lower energy costs
- Proving viability in harsh Toronto climate

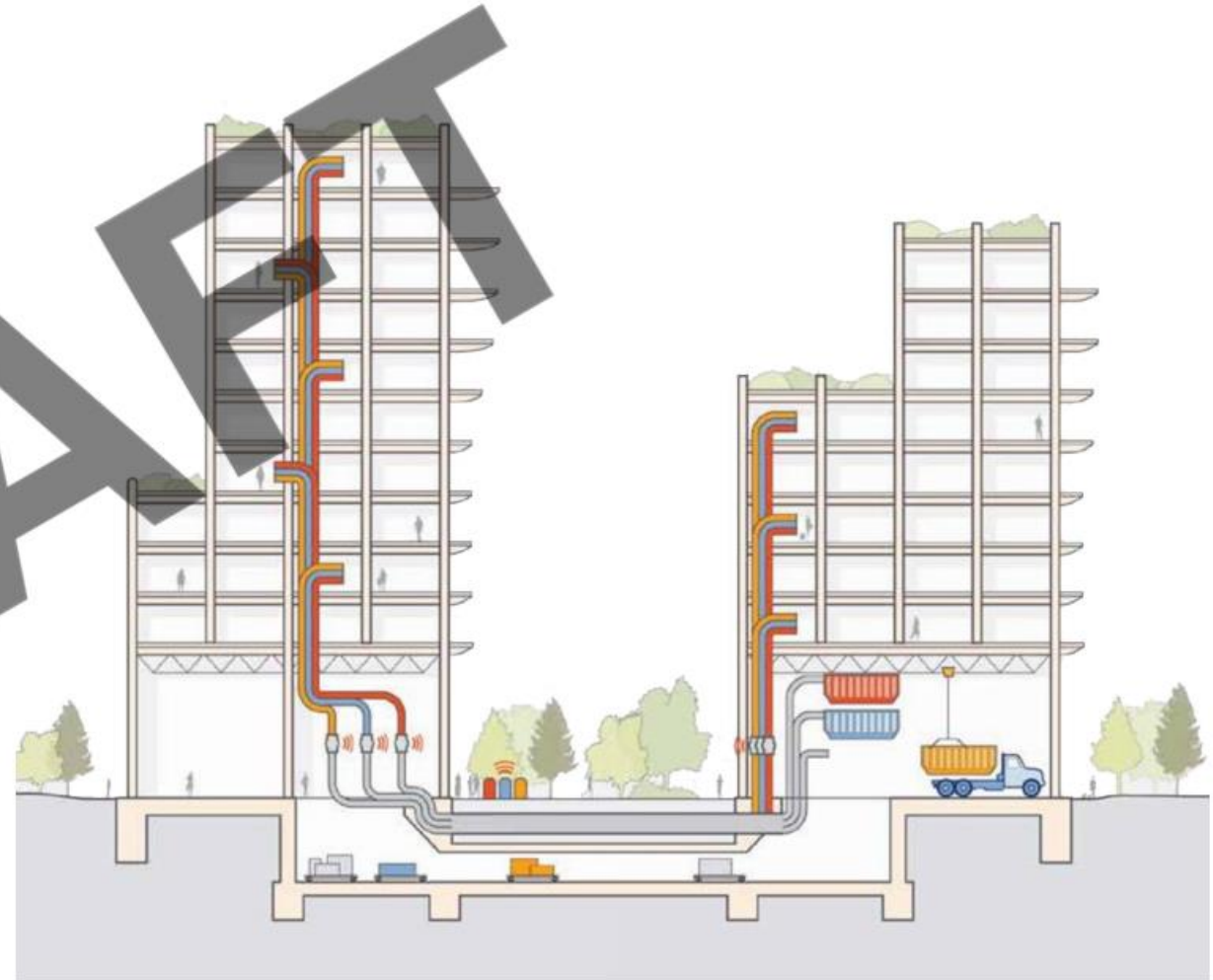


# Pneumatic waste collection

*Example of solution to support  
with WT investment*



- Underground vacuum tubes separately collect waste, recycling, and organics, reducing waste sent to landfill
- Better waste management reduces the greenhouse gas emissions from cities
- Keeps garbage trucks off the streets, making them safer
- An infrastructure solution proven in cities such as Stockholm and Barcelona



# Mass timber construction

*Example of solution to support,  
advocate for government funding*



- A factory-based, off-site construction of pre-defined building components can take less energy and time to build

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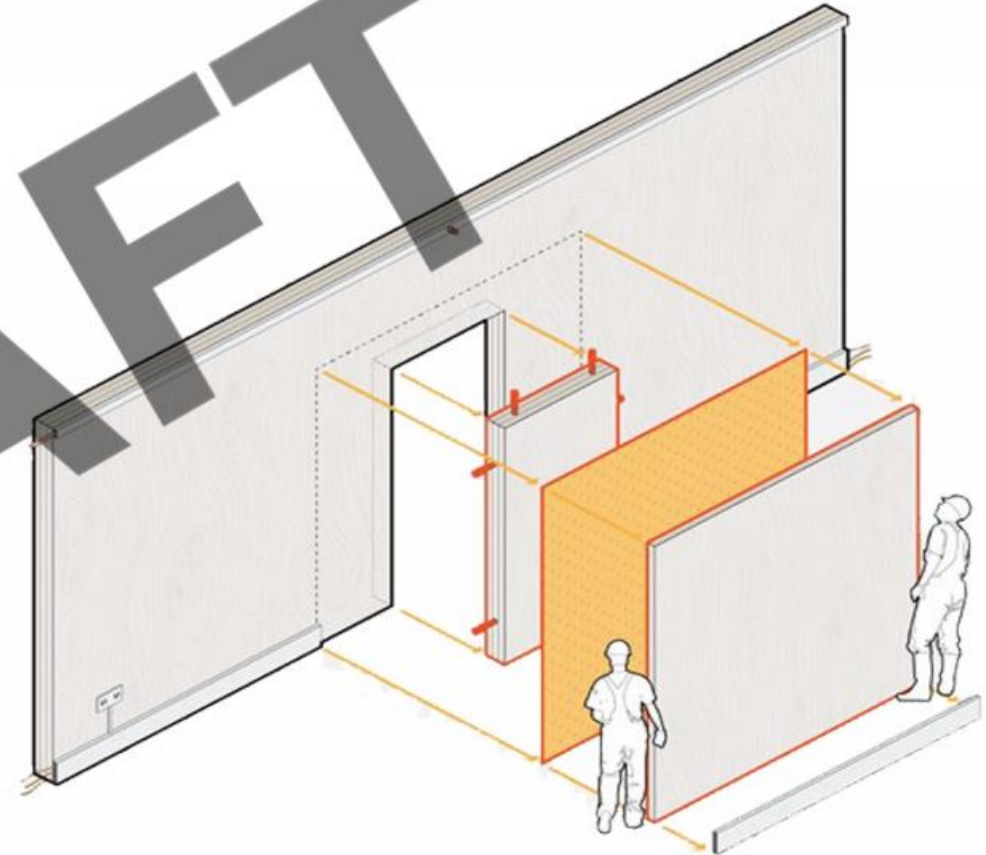


# Digital electricity (DE) & mist-based sprinkler system

*Example of solution to support and advocate for policy/regulatory reform*



- Buildings are also designed to be all-electric, using low-voltage direct current (DC) which will help increase adaptability and safety
- Surface-mounted high-pressure sprinklers use 90% less water to extinguish fires and enable partition walls to be easily movable



# Sewage waste heat recovery

Example of solution to not support



- Massive source of low-carbon waste heat that could offset natural gas used for heating buildings
- However, not appropriate for Quayside project due to piping distance and high costs of connecting
- Other options include capturing waste heat from nearby sewer pipes (instead of from the treatment plant)





# New Mobility

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**Pina Mallozzi** Vice President, Planning & Design

**Alex Mereu** Project Manager, Transit

# Addressing urban challenges

- Reduce emissions from carbon emitting vehicles
  - > Reduce automobile dependence and prioritize sustainable modes
  - > Accommodate electric vehicles
- Reduce congestion for all modes of transportation
- Provide affordable mobility options
- Ensure safety for road users, with an emphasis on vulnerable users
- Universal accessibility



# Summary of public feedback to date

## Support

### Transit and Timing

Prioritize the delivery of the approved transit plan

### Sustainability

Commitment to climate positive and sustainable modes of transportation

### Cycling

Commitment to improving cycling

## Consider

### Access

Quayside should not feel disconnected from an access perspective from the rest of the city

### Vulnerable Users

Prioritize safety for vulnerable users when evaluating innovations

### Accessibility

Ensure safety and accessibility concerns related to curbsless street designs

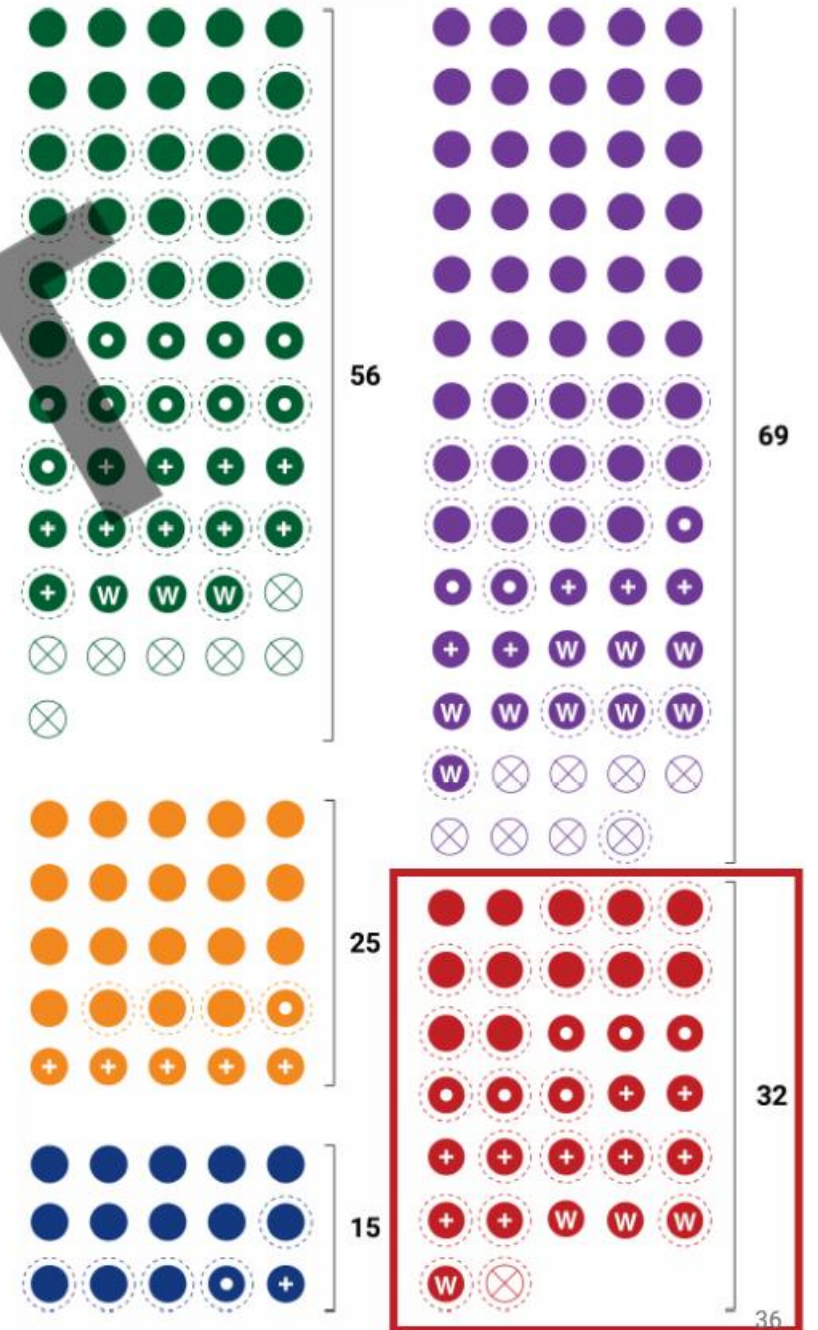
### Costs

Consider that innovations should not increase mobility costs for users.

# Summary of evaluation results

Each of the 32 dots represents one of the proposed solutions related to New Mobility in Sidewalk Labs' Draft MIDP.

- There are **31 solutions** Waterfront Toronto **supports**, including:
  - **6 solutions** Waterfront Toronto would support and advocate for policy/regulatory change
  - ⊕ **9 solutions** Waterfront Toronto would support and advocate for government funding
  - Ⓜ **4 solutions** Waterfront Toronto would support and invest in
- ⊗ **1 solution** that Waterfront Toronto **does not support**
- Indicates the **22 digitally enabled solutions**

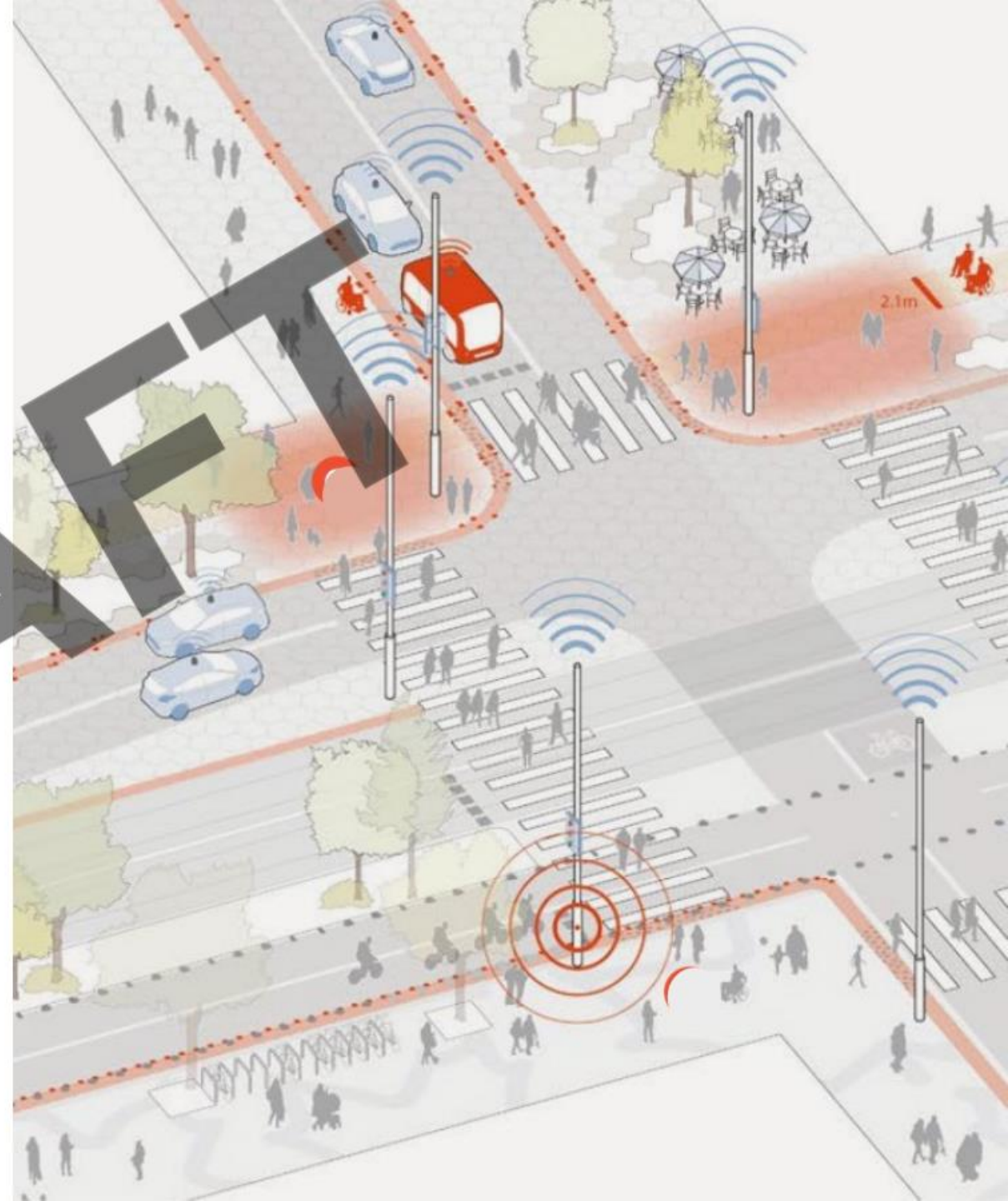


# Wayfinding beacons

*Example of solution to support with WT investment*



- Broadcasts information about the indoor and outdoor environment
- Improves wayfinding and navigation for people who are blind or partially sighted
- Enables the use of existing third-party wayfinding apps, such as BlindSquare
- Exists elsewhere in the city (Yonge and St. Clair)



# Expanded active transportation network (to all building entrances)

Example of solution to support  
with WT investment



- Closes gaps in cycling network
- Ensures safe and comfortable bicycle access to all buildings and transit stations/stops
- Increases area that is comfortable for pedestrians and cyclists
- Creates network redundancy (gives cyclists more than one option)

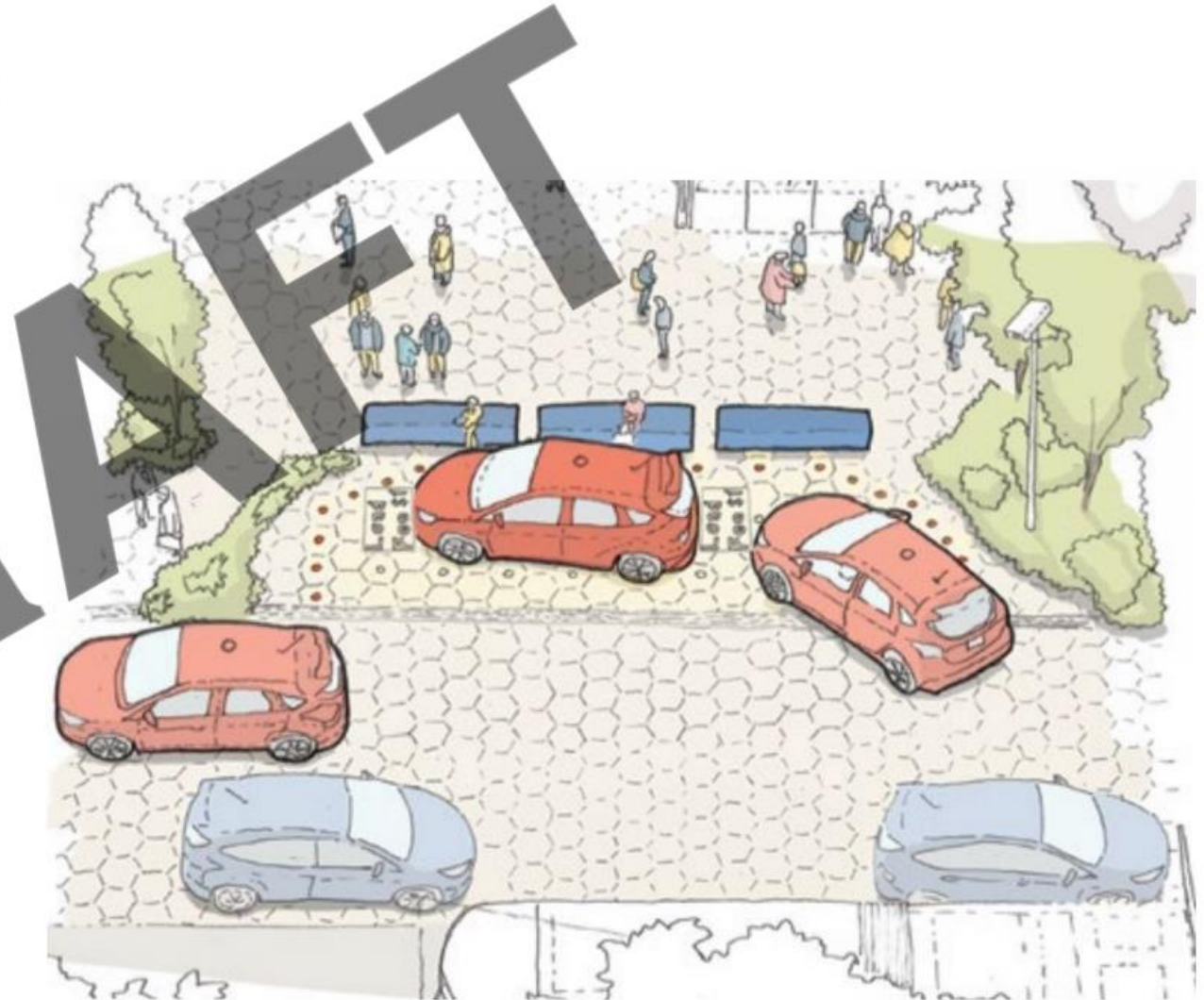


# Dynamic curbs

*Example of solution to support and advocate for policy/regulatory reform*



- Flexibility/adaptability
- Curb pricing – enables pricing of pick-up and drop-off activity in layby
- Streamlines communication of use policy
- Tool to manage curb space and curb-side demand
- Digital signage for curb-use policy currently not an approved signage type

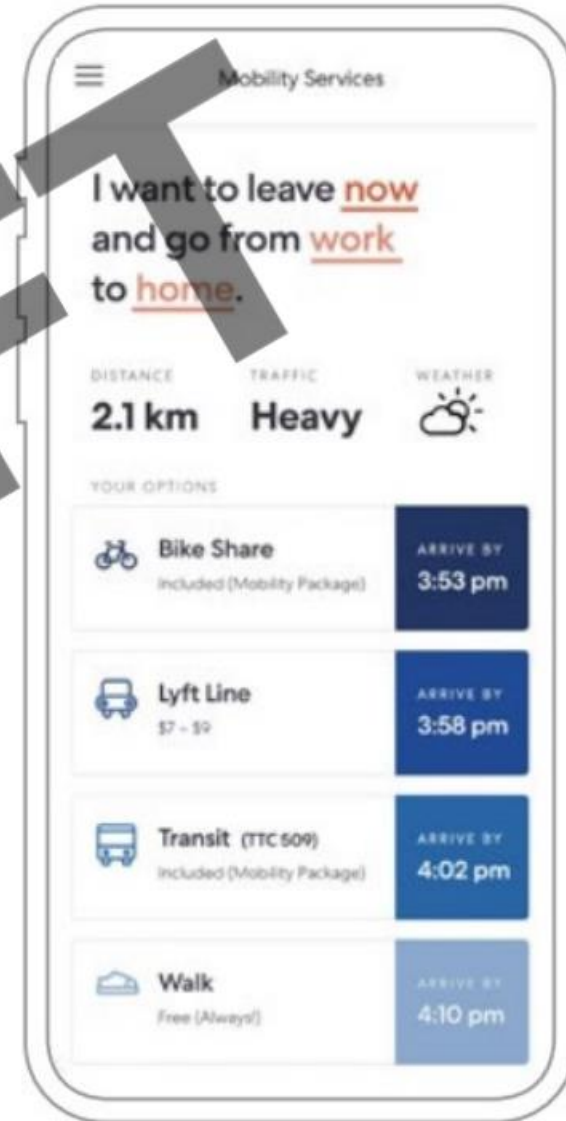


# Discounted mobility package

Example of solution to include



- Groups services and offers them at a discounted rate
- Integrates multiple transportation services into one digital platform (real-time information, trip planning and payment)
- Encourages the use of sustainable modes of transportation
- Significant challenge to integrate service providers in Toronto context. Best left to private sector and transit agencies to deliver.





# Outdoor comfort system – raincoats

*Example of solution  
not supported*



- Requires space in the public right of way to anchor to the foundation
- A potential obstacle for pedestrians
- Poses issues for accessibility
- Support outdoor comfort and alternatives may be explored
- Also evaluated as part of the Complete Communities room



# Economic Development, Digital & Partnership Considerations

**Kristina Verner** Vice President, Innovation, Sustainability & Prosperity

**Vance Lockton** Digital Governance Manager, Innovation, Sustainability & Prosperity

# Addressing urban challenges

- Deliver **key economic and social benefits** through our projects
- Leverage the revitalization of Toronto's waterfront to provide an enduring economic contribution to the City, the Province, and Canada
- From the beginning, Waterfront Toronto's vision for the Quayside Project was to provide an environment in which an urban innovation cluster can be established and thrive



# Summary of public feedback to date

## Support

### Local Companies

Optimism and excitement for how the plan could create opportunities for local Canadian companies

### Jobs

Interest and support for innovations that can bring more jobs to Toronto and stimulate additional economic benefit for the City

### Community Benefits

Support for the hiring commitment and the potential to incorporate community benefits into work at Quayside

## Consider

### Control of Digital Governance

Desire that Waterfront Toronto and Government(s) lead all privacy and digital governance matters.

### Protections

Concerns around how Canadian companies will be protected and retain the freedom to operate in their dealings with Sidewalk Labs

### Trust

Some expressed a lack of trust in the partner and skepticism around their claims or the motives behind their investments

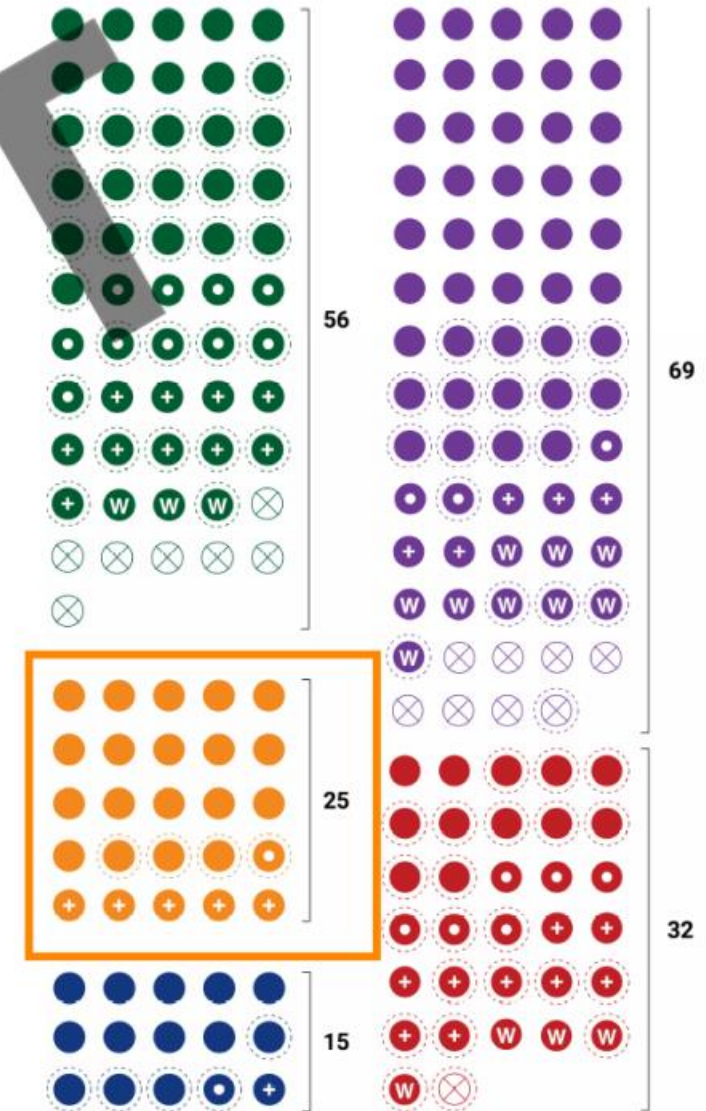
# Summary of evaluation results

Each of the 25 dots represents one of the proposed solutions related to **Economic Development** in Sidewalk Labs' Draft MIDP.

These are **all solutions** that Waterfront Toronto **supports and proposes to include**:

- 1 solution Waterfront Toronto would support and advocate for policy change/regulatory reform
- 5 solutions Waterfront Toronto would support and advocate for government funding

Indicates the **4 digitally enabled solutions**



## Further examination required

- ❑ **Job + Wealth Creation** – The economic development evaluation assessed the project’s job creation potential. However, the project’s overall potential contribution to Canadian wealth creation needs to be assessed.
- ❑ **Ecosystem Assessment** - A preliminary scan was conducted to determine whether there was Canadian capacity to deliver the proposed innovations identified in the MIDP. However, a more comprehensive analysis needs to be completed.
- ❑ **Economic Impact** – An earlier analysis was completed on the broader geography. However, an economic impact review now needs to be undertaken on the proposed program for the 12-acre site.

# Mass timber buildings, modular construction & factory

*Example of solution to support, advocate for government funding*



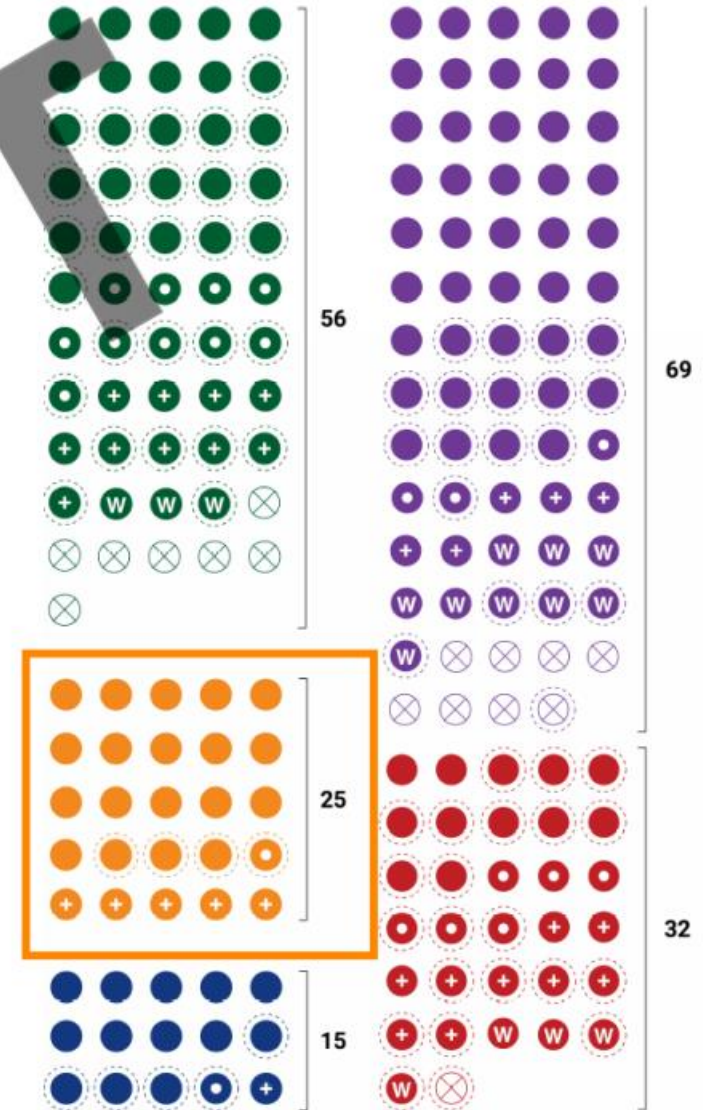
- There is potential to create a mass timber construction industry in Ontario through the construction activities at Quayside
- \$80 million investment in a tall timber factory based in Ontario
- Buildings in Quayside will be built using mass timber (cross laminated timber and glulam beams), a building material that can significantly reduce embodied carbon and provide biophilic properties that can improve health and well-being of the occupants.



# Summary of evaluation results

Each of the 15 dots represents solutions that enable a Responsible Digital Environment:

- All are solutions that Waterfront Toronto supports and proposes to include:
  - 1 solution Waterfront Toronto supports and would advocate for policy change/regulatory reform
  - ⊕ 1 solutions Waterfront Toronto would support and advocate for government funding
  - Indicates the **5 digitally enabled solutions**





# Internal accountability (“enabling digital”)

Example of support, include



Sidewalk Labs has proposed multiple commitments and practices, including:

- **Use of common, published standards** for both technology and data, to catalyze a diverse multi-stakeholder innovation ecosystem.
- A set of **Responsible Data Use Guidelines** to guide decision-making on digital proposals, and a **Responsible Data Use Assessment** to document this decision process.



Beneficial  
purpose



Transparency  
and clarity



Data minimization,  
security, and  
de-identification  
by default



Publicly accessible  
by default



No selling or  
advertising  
without explicit  
consent



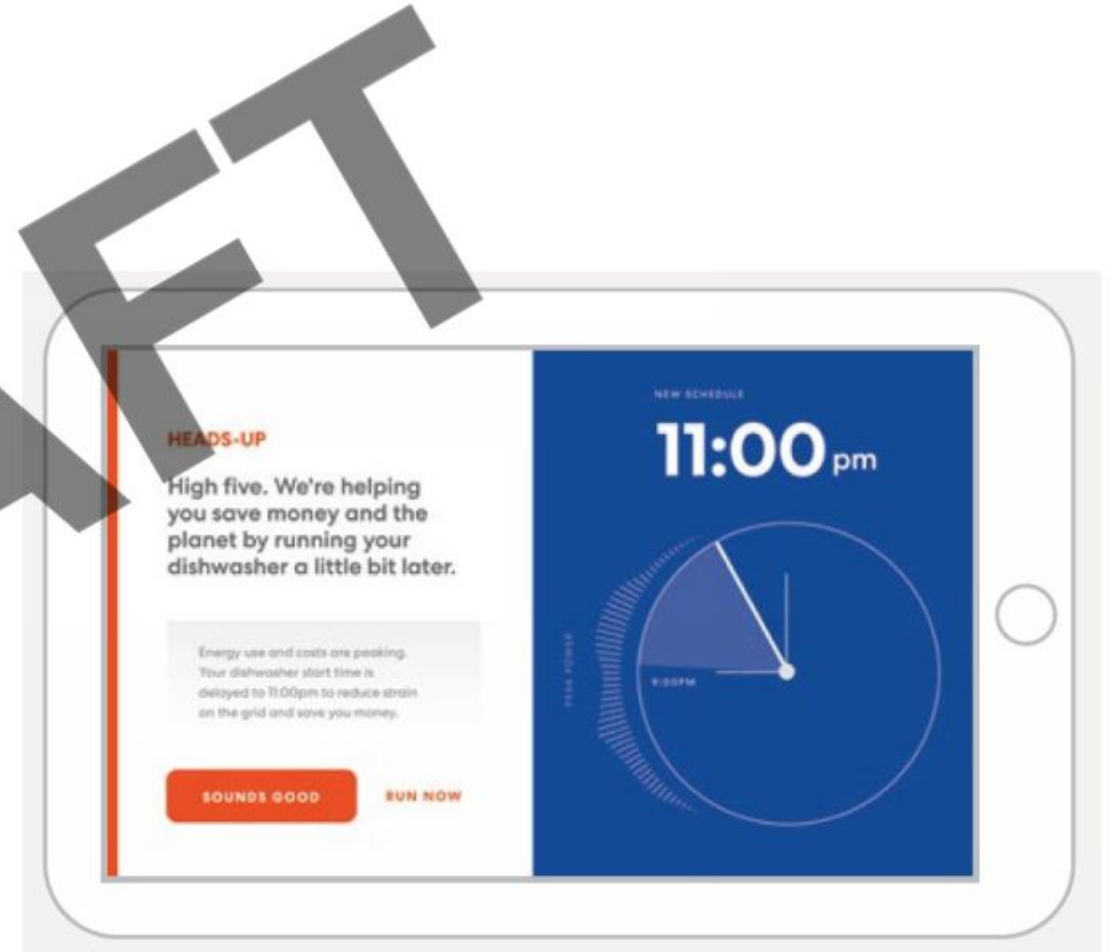
Responsible  
AI principles  
required

# Automated schedulers

Example of support, include



- Reduces energy consumption and cost by automating control of lights, blinds, ventilation, and appliances using weather forecasts, occupancy and energy prices
- For example, tenant can set an energy budget (to receive predictable bills), and Home Scheduler can automatically adjust air conditioning, timing of dishwasher or other appliances, etc.

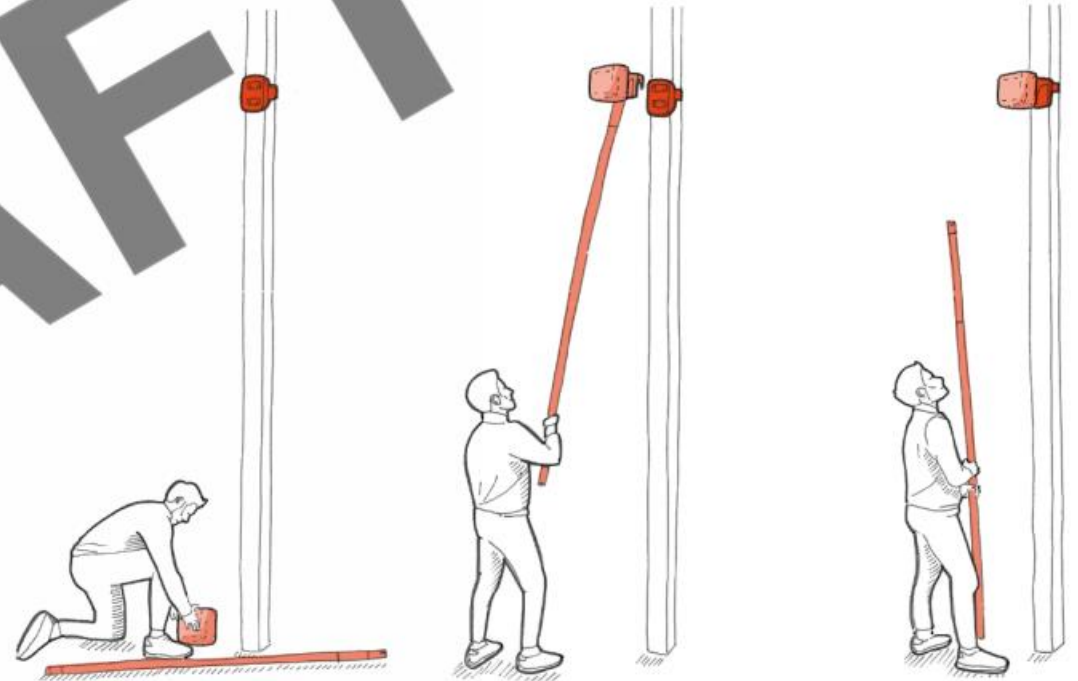


# Koala standardized mounts

*Example of solution to support and advocate for policy/regulatory reform*



- Standardized outdoor mounts which make power and network access readily available
- Reduces time and effort to deploy, maintain and remove sensors
- Can authenticate connected devices and automatically encrypt data



# Partnership Considerations

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# Partner performance metrics

Waterfront Toronto identified the following metrics to evaluate the partnership, which are defined in our Corporate Partnership Playbook:

- 1 Organizational Capacity/Capabilities**  
(e.g. access to partner talent and expertise, new knowledge, tools and methodologies)
- 2 The Partner Experience**  
(e.g. ease and speed of decision making and issue resolution, reliability and consistency in delivering on promises)
- 3 Financial Performance**  
(e.g. administrative cost and time burden, access to new funding and revenue opportunities)
- 4 Public Impact**  
(e.g. public perception of the partner, broad benefits from the project)

# Due diligence in partner selection

## Waterfront Toronto undertook due diligence on Sidewalk Labs prior to:

1. Selecting Sidewalk Labs as the Innovation & Funding Partner (Aug/Sept 2017)
2. Executing the Framework Agreement (October 2017)
3. Executing the Plan Development Agreement (July 2018)

## Due diligence included:

- Proponent Team Composition and Organizational Capacity
- Financial Strength (including financial commitments from parent corporation)
- Corporate Structure (including legal status)
- Any existing claims, litigation or proceeding against Sidewalk Labs

**Should a decision be made to proceed to the next phase, Waterfront Toronto will undertake additional due diligence before proceeding with implementation agreements.**

# Risk mitigation

Should a decision be made to proceed to implementation, managing legal and commercial risk will be critical. Waterfront Toronto will require mitigations such as:

- **Define and share liability** (e.g. clear definition of roles and accountability)
- **Manage performance shortfall or default** (e.g. audit rights – financial and technical)
- **Back-stop contractual requirements** (e.g. appropriate financial security)

# A word on digital governance & privacy



*From the October 31, 2019 Materials*

- ✓ Comply with **all existing and future legislation, regulations and policy** frameworks as well as WT Digital Principles & emerging Intelligent Community Guidelines
- ✓ Personal data collected will be **stored in Canada**
- ✓ Digitally enabled solutions will not impede fundamental freedoms and where feasible will **foster accessibility, public engagement and participation in Quayside**
- ✓ **Waterfront Toronto to be the project lead and interface with governments** on all digital governance and privacy-related matters
- ✓ There will be further **public consultation** on digital solutions with an emphasis on ensuring **engagement with groups most impacted by a proposed technologies**
- ✓ Digital proposals may be required to go through a **public meeting process and approval by governments**

## Waterfront Toronto's Digital Principles

The core foundation of these draft Principles is that any project proposed to Waterfront Toronto must represent **ethically responsible innovation that reflects public values and preserves or enhances the public good.**

1. Everyone will have the opportunity to **have access to, and benefit equally** from, digital solutions
2. Digital solutions will be **open, ethical, and resilient**
3. Everyone will be able to **understand how their data is being collected and used**, and how organizations can and will be held **accountable** for their practices
4. Strong **privacy protections** will be in place at all times, including **de-identification of personal data at source**
5. Data and systems will remain under local control and be **subject to applicable laws.**



# Intellectual property

From the October 31, 2019 threshold issues resolution:

- ✓ **Global patent pledge** allows Canadian innovators to have the right to use Sidewalk Labs' Canadian and foreign patents without fear of patent assertion
- ✓ **Revenue share** products and services piloted in Waterfront Toronto-facilitated testbed area based on percentage of revenues, rather than profits
- ✓ Confirmed Waterfront Toronto's **licensing rights** to site-specific IP developed thus far

## How Waterfront Toronto will ensure Canadian companies have the freedom to operate so that they can grow and prosper:

1. **Non-assert provisions** to clear the way for Canadian companies to scale and compete globally
2. Respect the sovereignty of Canadian companies with **fair and transparent procurement processes**
3. Work with governments, stakeholders and **standards-setting bodies** on data and IP-related issues

Thank you

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