



About the Sidewalk Toronto Mobility Advisory Working Group:

The Sidewalk Toronto Mobility Advisory Working Group was established in March 2018 to be a source of external expertise to Waterfront Toronto and Sidewalk Labs. Each meeting was chaired by Rit Aggarwala, Head of Urban Systems at Sidewalk Labs, and Pina Mallozzi, Director of Design at Waterfront Toronto.

Members were selected by Waterfront Toronto and Sidewalk Labs from a long list of local leaders and experts on issues related to the Quayside project. The list was developed to ensure a range of diverse opinions that balanced institutional affiliations and perspectives on urban issues. Members were primarily from civil society and academia, with a few from the private sector.

Members were invited to attend seven meetings, though not all members were able to attend every meeting. Meetings were held on March 20, May 3, June 19, August 14, September 26, November 9, and December 19, 2018.

The role of the advisors was to:

- Provide guidance, critiques, and suggestions on proposed approaches, concepts and designs;
- Consider and convey the perspectives of relevant constituencies and stakeholders;
- Provide a sense of the broader community's likely reactions and concerns, and explore how these might be addressed; and
- Provide feedback on any other relevant matters that Sidewalk Labs and Waterfront Toronto referred to the Advisory Group for comment.

Group members operated using a consensus-based approach, and any points of disagreement were noted in the minutes.

The following minutes from each meeting may include editor notes for clarity and context, and have omitted any commercially sensitive content. Meetings followed 'Chatham House Rules'—comments were recorded but not attributed to specific individuals.

In the notes, 'project team' refers to staff, variously, of Waterfront Toronto and Sidewalk Labs who were involved in convening and presenting to the advisory group.

We list the members of the Mobility Advisory Working Group below in order to establish a complete record. We are grateful for their time, expertise, and their work to refine and improve the ideas that will make up the Master Innovation and Development Plan (MIDP) proposed by Sidewalk Labs. It is important to note that their participation in this advisory working group, and their identification here, does not imply their endorsement of the MIDP, or any component thereof, or this project generally.

Members of the Mobility Advisory Working Group:

Name	Organization
Alun Lloyd	BA Group
David Ticoll	University of Toronto
Eric Miller	University of Toronto
Keagan Gartz	Cycle Toronto
Josipa Petrunic	Canadian Urban Transit Research and Innovation Consortium
Kevin McLaughlin	Free2Move
Lindsay Wiginton / Carolyn Kim	Pembina Institute
Matt Roorda	University of Toronto
Matti Siemiatycki	University of Toronto
Michael Sutherland	Hatch
Nancy Smith Lea	Toronto Centre for Active Transportation
Raed Kadri	AV Innovation Network
Steve Munro	Independent transit expert
Sue Zielinski	Independent mobility consultant



**Sidewalk Toronto Mobility Advisory Working Group
Meeting 1: March 20, 2018
Globe and Mail Centre**

The Sidewalk Toronto project team convened the first meeting of the Sidewalk Toronto Mobility Advisory Working Group on March 20, 2018. Experts from the mobility sector in Toronto as well as staff from Sidewalk Labs and Waterfront Toronto working on the Sidewalk Toronto project met to discuss and advise on initial plans for the proposed development of Quayside. This was the first of a planned four meetings.

Executive Summary:

- The group will observe 'Chatham House rules'. An updated Terms of Reference was to be sent out following the meeting.
- Sidewalk Labs representatives presented a short presentation introducing Sidewalk Labs and their partnership with Waterfront Toronto, and gave an overview of the Mobility pillar's goals and priorities for Quayside.
- Participants discussed several questions posed by the project team. In particular, they discussed:
 - The importance of sustainability, inclusivity, privacy, financial feasibility;
 - Innovations on street curb use and road design that could improve transportation options;
 - Infrastructure strategies to help alleviate the impact of cold weather on cycling uptake;
 - The need to plan for autonomous vehicles as a major component of the transportation system.
 - How autonomous vehicle (AV) technology in Quayside could play a significant role in 'first-mile, last-mile' transportation solutions, and the importance of public education to understand the potential of this technology.
- The next meeting was set for May 3, 2018. As meetings progress, participants will examine various topics in closer detail.

Introduction and Background:

Participants introduced themselves before reviewing their draft Terms of Reference.

- Participants agree that meetings will be subject to “Chatham House” rules, which means that while the contents of the meeting can be discussed, the comments and perspectives of participants will not be attributed. However, the project team asked for participants to exercise discretion when it comes to confidential materials that may be shared with members during the course of the advisory group’s meetings.
- Sidewalk Toronto project team let participants know they can refer specific media questions about the project or the advisory groups to the project team.
- A list of the group’s members will be published by the next public roundtable. Anyone who wishes to not be included on this list should send a request to the chairs. [Ed note: Group names were released at Roundtable 2 on May 3rd)

With the terms of reference agreed to by the participants, they turned their attention to an introductory presentation that explained the origins of Waterfront Toronto, Sidewalk Labs, and their partnership. The presentation also described the Quayside site, and provided an overview of the work underway within the mobility pillar. A summary of this presentation was distributed to participants.

Introductory Presentation Discussion

Participants provided immediate reflections and responses, and asked the project team questions about their presentation.

- Participants broadly agreed that the project should strive to be both sustainable and climate positive. They suggested several ways of doing this, namely through innovative building techniques, and promoting walking, cycling, and transit options over car use.
- Participants emphasized the importance of constructing sustainable buildings, which will not only help lessen the project’s climate impact, but will also lower utility costs, and be healthier to live and work in.
- Participants agreed that Quayside should be an affordable and inclusive place to live.
- A project team representative emphasized that technology and data gathering would not infringe on citizens’ privacy, and that the project is committed to upholding the highest standards in data governance and protection.
- Participants agreed that the project must produce innovative solutions to city-building challenges while being financially viable. However they also cautioned against unnecessary complexity and expense.
- A participant asked how the project’s goals and innovations are going to be communicated to citizens.
 - The project team drew attention to the public engagement strategy for the project (posted on the Sidewalk Toronto website), noting they have also begun an

engagement program with local Quayside residents. These efforts will increase as the process unfolds.

- Another participant asked if there has been any dialogue about setting up a sister city for the project.
 - The project team responded that there isn't much interest in a sister city at the moment, but hope that the project's strategies will get replicated in other municipalities.
- A participant suggested that the project team take into account local political dynamics and how these dynamics may shape the project approval process.

Question Set 1: How do we deliver traditional transit?

Given that traditional transit is critical to the delivery of Quayside and the Eastern Waterfront, is there a way to accelerate the delivery of the LRT?

Based on your experience in other jurisdictions, are there other alternative delivery models that should be considered?

- The project team emphasized that the project's core objective is to create a safe, effective and environmentally sustainable transit system that prioritizes pedestrians, cyclists and transit. The project will use public transport as its mobility backbone, while still providing comfortable options for pedestrians and cyclists.
- Participants agreed that road development is a key area for potential innovation. One participant cited the importance of traffic data and understanding how people use the road to inform how to optimally organize roads.
- The topic of AVs was a substantial part of the discussion, as members responded to two papers that Sidewalk Labs staff had circulated in advance:
 - Participants agreed that the concept of AVs is very exciting, and that it's essential to develop the Quayside community with the future of AV technology in mind. However, the rollout needs to be managed so the public feels comfortable with this new technology.
 - Several participants suggested programs and events where members of the public can "touch and feel" AVs.
 - Several participants spoke of the importance of making new roads adaptable for autonomous vehicles (AVs).
 - Participants talked about the idea of AVs as a form of public transportation, noting that using them for this purpose would put Toronto at the cutting edge.

- A few participants spoke of how street curbs could be innovated to be as efficient as possible.
 - One participant suggested that ride sharing apps like Uber could pay to use specific curb areas to pick up and drop off customers. Uber has already expressed interest in this idea.
 - Another participant suggested setting times for curbs to be clear for street cleaning.
 - While authority over designating curb usage is not yet clear, the Chairs said that more complete ideas on this would be shared at the next meeting.

Question Set 2: How do we increase ped/bike share?

What infrastructure do we need to build that will push more people to ped/bike?

Are there any other modes of alternative transit we should consider?

- The participants discussed how cycling as a form of transportation can be encouraged among Toronto's workforce. Cyclists in Toronto often don't cycle in the winter. The group debated how much of that can be fixed by better and more innovative infrastructure.
 - Most participants agreed that while the cold deters many cyclists, there is plenty that can be done to make winter biking safer and more attractive, such as by ensuring snow and ice clearing.
 - Participants debated whether bike lanes should be on road sides or off-street.
 - One participant suggested that mixing bike lanes with pedestrian paths can be unsafe for pedestrians.
 - Other participants suggested off-street bike lanes would make commuting easier and more convenient than driving.
 - To combat icy roads and paths in the winter, one participant suggested putting radiant heat in the pavement.
 - While participants were genuinely interested in the potential of this idea, there were many questions about the logistics. A few participants were concerned about energy usage, and argued that the benefit would need to justify the cost.

Question Set 3: What is the impact of AV?

What excites and concerns people about the introduction of AV technology?

What opportunities exist for the public realm of the future as we transition to a more AV-centric system?

How can AVs co-exist with non-AV modes?

- The group's conversation returned to the subject of AVs. Many were excited by the prospect of introducing AVs as a component of the transit system, and they discussed what this might look like.
- Participants noted that while AV technology is an exciting new development that the public is broadly interested in, very few have actually used AVs yet. There are still substantial concerns about safety among the public. Participants emphasized the need to demonstrate to the public the benefits of AV technology.
- The group then discussed how AVs could specifically benefit public transit:
 - A few participants explained that AVs services could vary in sizes, from four-seater cars to twelve-person vans, or more.
 - A participant emphasized that AVs should be demonstrated, so that feedback can be used to better the customer experience.
 - A participant suggested AVs could be used to connect other transportation services, for example, by taking an AV taxi to the train station. AV could serve as a 'first mile, last mile' solution by efficiently taking customers short distances.
 - A participant suggested the idea of incorporating a service from Billy Bishop Airport to Union Station and Quayside.
 - There was some discussion about whether 'first mile, last mile' solutions should put more emphasis on walking. However, it was noted that walking is not always an option for everyone, and alternative transit is often needed. AVs could be more efficient than Ubers in providing this service, because they can carry more people and will be better for the environment.
 - The participants discussed the fiscal issues regarding AVs. While the cost per mile would be low, the group raised concerns about AV energy consumption (heating and A/C).

Conclusion and next steps

The meeting chairs ended the meeting by thanking all the participants. The next meeting is set for 9:00 AM to 12:30 PM on May 3rd, with location to be announced.



**Sidewalk Toronto (SWT) Mobility Advisory Group
Meeting 2: May 3, 2018
Conference Call**

Background

The Mobility Advisory Group met for the second time following the group's inaugural meeting on March 20, 2018. An in-person meeting will be rescheduled in advance of July's meeting.

The purpose of the call was to preview and get feedback on the Mobility Pillar presentation at the Public Roundtable scheduled for later that night, and to offer an update on the project's mobility work to date.

Introduction and Update from the Project Team

The call began with a preview of the presentation to be delivered later that night at the Roundtable.

- The format of the roundtable was discussed:
 - Three topics were to be covered at the Public Roundtable: Mobility; Affordable Housing; and Responsible Data Use. The goal for Public Roundtable #2 was to continue fostering and documenting a series of focused discussions and would involve presentations by the project team, followed by roundtable discussions.
 - Subsequent Public Roundtables later this year will cover preliminary sketches of the development program and more components of the draft Master Innovation & Development Plan (MIDP) to solicit feedback.

Next, the project team gave updates on the work that had been undertaken since the last working group meeting on March 20. Updates included:

- Street design ("Streets for People"):
 - The project team vision is to redesign streets for all users to take full advantage of the benefits associated with autonomous vehicles (AV), and to make streets dynamic.
 - The project team is preparing initial designs and cross-sections, incorporating innovations such as lights embedded in pavement to signal changes in road use

at different times. The team is also exploring other innovations such as heated pavement and wind breaks for bike lanes.

- The designs will be shared with the Mobility Advisory Group in a subsequent meeting.
- AV shuttle demo (“Shared New Mobility”):
 - The project team intends to test AV shuttles as an element of the vision for shared new mobility to replace auto ownership.
 - The project team hopes to make an announcement in the near future regarding a demonstration of self-driving vehicle technology.
- Innovative freight delivery system (“Freight Transit”):
 - The project team is actively advancing work aimed at reducing the presence of delivery trucks on the streets of the future Quayside neighbourhood, which will also enable a more attractive streetscape.
 - The vision is to treat Quayside as a campus with one freight center and an internal delivery network, with the goal of making it simple and cheap to move freight (and outbound waste) using new technology.
- In support of the Mobility Pillar, and in collaboration with Eric Miller (University of Toronto) as an advisor, the project team continues to develop a next-generation travel demand modeling tool.
 - The goal is to improve upon the transportation industry’s ability to model travel demand and preferences, most notably regarding the response of travelers to policy and infrastructure interventions.
 - There are two ongoing efforts that the team is advancing in parallel:
 - developing a new modeling tool with anonymized location data, and
 - updating an existing modeling tool.

Questions

- Does the travel demand modeling work include considerations for walking and cycling?
 - Yes, and in fact, the models under development by the SWL team offer greater spatial resolution than conventional models, including greater sensitivity to walking and cycling as active transportation modes.
- Will the models include geographic areas beyond Quayside, most notably Keating Channel and Villiers Island?

- Both models will capture the entire City of Toronto, as it is important to understand trips to and from the waterfront from a broader area.
- How will the models account for capacity constraints in the transportation system, such as choke points under the rail corridor? Will there be enough roadway capacity to handle the trips that are projected to occur with the rise of AVs? Is the project team considering the potential effects of other innovative transportation modes such as e-bikes / scooters, dockless bikeshare, etc., including potential user demand and space requirements?
 - Both models focus principally on travel demand, and the supply side of the equation (e.g., traffic congestion, transit vehicle occupancy, etc.) is accounted for at a high level. The implications of AVs on traffic congestion is a matter of ongoing research.
 - The travel demand models rely on revealed preferences from existing and well-established transportation modes, and it will take time to establish a level of fidelity in the assumptions for new modes. One of the key strengths of the models is that they are being developed using a broader range of data than traditional survey data, and thus can offer a more complete picture of existing travel patterns.
 - The models under development will also offer a finer level of granularity—and the ability to run different scenarios more rapidly—than conventional models. The project team is considering a wide range of innovative transportation modes, including those referenced in the question as well as others, such as the potential role of microtransit in complementing the existing transit network.

Discussion

Members of the Mobility Advisory Group also offered feedback on the Mobility slides for the Public Roundtable.

- A participant commented that the questions should take into account that many people in downtown Toronto have already reduced their dependence on cars.
- A participant suggested that the first question be reworded to collect information about what modes of transportation people use in a typical day and why.
 - It was noted that it is also important to distinguish between weekday and weekend travel, which can provide insight into the use of ‘cottage cars’ and carsharing, and to get as granular as possible regarding distance traveled at what time, for what purpose (e.g., commuting, recreating, etc.), and on what days throughout the week.
- A participant suggested it would be worthwhile to discuss potential ‘carrots and sticks’ with attendees in the context of giving up their cars, and to ask for details about what challenges need to be overcome to make that possible.

- A participant suggested it would be useful to provide more localized data in the slide that shows mobility statistics, and specifically to distinguish between downtown Toronto (and the surrounding area) and the rest of the City.
- A participant said that the conversation about car usage and ownership should also touch upon the implications for public space, and specifically, the alternative uses of public space in the absence of parked cars. The hallmark of a great neighbourhood is lively, animated space. However, we should not equate cars parked on the street with vitality. The team should consider interim options for strategically placed parking as the neighbourhood evolves over time.
- A participant noted it is important to be thoughtful when selecting the location for destination uses, as this can induce travel patterns and mode choice.
 - The need to drive, and the need for parking, is in part dependent upon the location and transit accessibility of key destinations. For instance, the location of Evergreen Brick Works encourages auto use and regularly experiences parking issues, whereas St. Lawrence Market is easily accessible by streetcar.
 - The availability of multi-modal connections is a related factor. It could be an interesting exercise to identify locations where at least two non-auto modes of transportation overlap (e.g., a transit station co-located with a bikeshare station). It is also possible that people currently choose to drive because of limited technological connectivity (e.g., schedule and fare integration of different transit modes).
 - The walkability and pedestrian safety of an area can also inform travel choices. For instance, if a school is located in the vicinity of the Don Valley Parkway, it is probable that people would drive because of the lack of safe accommodations for pedestrians.
 - The proximity of destinations to Quayside will also be an important variable. For instance, if Loblaws was not located on Queens Quay, the next closest shopping location may require a car trip.

The project team agreed to take the feedback shared during the call into account when facilitating the breakout discussions during Public Roundtable #2 later that evening.

- SWT staff noted that one of the goals of the Public Roundtable was to hear from attendees about their car usage patterns, including to what extent they live (and/or want to live) a car-free lifestyle even if they own a car. A related goal is to get input on different strategies for encouraging potential Quayside residents to give up their cars.
- SWT staff agreed the comment about the use of public space in the absence of cars is an important design consideration, and this issue clearly shows the synergy between the Mobility and Public Realm Pillars in the SWT project.
- Staff clarified that the intent of the slide that shows mobility statistics was to demonstrate the paradox of high auto ownership in a transit-rich city. The project team hopes to facilitate a discussion about the opportunities presented by new mobility options to

resolve this paradox. They noted it would also be interesting to see what neighbourhoods are over- or under-represented among attendees at the Public Roundtable, as travel patterns differ throughout the City.

- The travel demand modeling tools will enable the project team to iterate around different scenarios of development and mobility interventions, which, in turn, can facilitate the identification of a preferred program.

Next Steps

- The project team will share the recently issued summary report from Public Roundtable #1 with the Mobility Advisory Group.
- The project team will also send a Doodle Poll to schedule an interim check-in with the Mobility Advisory Group in advance of the next meeting, which is scheduled for July 18, 2018. The check-in will include additional updates from the team.



**Sidewalk Toronto Mobility Advisory Working Group
Meeting 3: June 19, 2018
Centre for Social Innovation Spadina**

Background

This is the third convening of the Mobility Advisory Working Group. The inaugural meeting was on March 20, 2018, and a conference call took place on May 3, 2018.

Introductions and Update on Overall SWT Process

Following introductions and an overview of the agenda, the project team opened the meeting by providing an update on the status of the planning process, focusing on the delivery of the Master Innovation & Development Plan (MIDP) in early 2019.

- At the next meeting of the working group, the project team intends to present preliminary ideas for the site plan, in addition to continuing the discussion of policy initiatives and overarching planning principles to guide the MIDP.
- The project team is planning to organize additional Public Roundtable events later in 2018—building upon the two events earlier this year—to continue soliciting public input for the MIDP. In addition to the Public Roundtables, the project team has convened a Reference Panel, which consists of a group of people who are representative of the City of Toronto’s population at large.

Review of Vision

The project team summarized the components of the mobility vision for Quayside and the broader Eastern Waterfront, as follows:

- Extend the transit backbone to Quayside and through the Port Lands
 - There is generally consensus on the need for streetcar extensions along the Eastern Waterfront, as documented in the Port Lands Planning Framework. The key uncertainties are the timeline for implementation and securing the necessary funding commitments. The project team is exploring an idea to use the Quayside development itself to contribute to the cost of construction of the streetcar extensions, which could help to expedite project delivery.

- Create streets for people making use of future autonomous vehicle (AV) flexibility
 - Given the enhanced roadway safety enabled by AVs (i.e., with respect to reliable adherence to speed limits, precision of steering, etc.), the project team is innovating in street design to re-prioritize the right-of-way for pedestrians and cyclists, as opposed to catering to the automobile.
- Promote walking and cycling through design and technology
 - The project team is working on two key initiatives to facilitate walking and cycling as core modes in Quayside:
 - Mitigate the extremes of weather conditions through a public realm strategy that includes heated pavement and wind breaks; and
 - Improve access routes to the site through underpass enhancements at Cherry Street and Parliament Street.
- Replace personal auto ownership with new mobility, including AVs
 - Many Toronto households own cars, and auto mode share outside of the Downtown Core remains high, so there is a need to complement traditional transit with new services to encourage a shift away from auto use. Accordingly, the project team is exploring a range of new mobility solutions, including—but not limited to—shared and on-demand AVs, also with a focus on reducing dependence on fossil fuel combustion.
- Create a freight transit system that reduces impact and cost
 - Freight is often a major pain point for today’s cities due to the contributions of delivery trucks to congestion, double parking, etc. There is an opportunity for technology to enable innovation in last-kilometre deliveries or even the last 50 metres. The project team is currently considering a number of freight strategies, which will be discussed at a subsequent meeting.
- Manage streets dynamically and optimally
 - The project team is actively working on the application of technology to optimize use of the roadway network for all users. One example of this approach is to introduce dynamic pricing of the roadway—as well as the curb—to manage demand.
- Build and use an activity-based travel demand model to understand likely flows, mode shares, and impact
 - The project team sees an opportunity to use new forms of data—in ways that protect people’s privacy—to conduct more granular and up-to-date travel demand modeling, which can inform decision-making about critical transportation investments.

The project team also offered an overview of two mobility demos in Toronto:

- (1) AV demo
 - The project team discussed the potential, as had been described in the Sidewalk Labs RFP response to Waterfront Toronto, to do a demonstration of AV technology intended to allow the public to experience AV vehicles. [Editor's note: this project did not come to fruition due to logistical reasons.]
 - A participant commented that this objective is aligned with one of the public education initiatives of the Province's Autonomous Vehicle Innovation Network (AVIN), which seeks to dispel public misconceptions about AVs.
- (2) Dynamic curb / digital signage demo
 - The project team discussed a potential dynamic curb and digital signage demonstration in the summer to explore the effectiveness of using dynamic message signs to manage the use of curbside space. [Ed note: this demo did not move forward for logistical reasons].

Below is a summary of questions from the working group participants and the corresponding responses from the project team during this portion of the meeting:

- Question: What is the geographic scale of the SWT project? The articulated vision suggests something broader than the Quayside site.
 - Response: Quayside is the site on which Sidewalk Labs expects to first pilot the technologies and strategies included in the MIDP. Our Plan Development Agreement with Waterfront Toronto enables us to propose ideas that work best at scale, which could be beyond Quayside.
- Question: How will Quayside coexist with other neighbourhoods in the City, both physically (with respect to infrastructure needs) and socially (in the context of public acceptance)?
 - Response: The physical link between Quayside and the rest of the City becomes apparent when we begin to look at mobility patterns to and from the site, which will be discussed later in the meeting (see below under "Understanding Demand"). To increase relevance and public acceptance for the project among Torontonians from across the City, the Reference Panel (complemented by the Public Roundtables) is helping to engage a wide variety of viewpoints.

Participants also offered additional comments, as summarized below:

- The project team seems to be approaching this project in a manner that parallels a responsive and progressive developer, but through a futuristic lens of a digital platform and the application of cutting-edge technology.
- Given the need for Quayside to coexist with other neighbourhoods in the City, it is important to consider what the potential "infrastructure ask" may be of the City,

especially in light of the ongoing debate about funding for bike lanes in Toronto, which are relatively inexpensive relative to other infrastructure investments.

- The project team should communicate the benefits of the mobility vision through the lens of the user experience, and specifically about the seamless integration of different modes. This would be more effective than framing the vision as a collection of disparate improvements to the transportation network, and could help to encourage people to rely less on automobiles.

Presentation: Understanding Demand

The project team started this portion of the meeting by introducing a demo of the Replica tool, and activity-based travel demand model that allows planners to explore how, when, where, and why people move around a region, using more current and representative data than conventional models.

The project team summarized the preliminary results of a travel demand analysis for a nine-parcel area around and near Quayside. After presenting the results, the project team offered an interactive demo of the Replica Explorer tool to show how the data can be filtered and queried to understand travel patterns.

Participants asked several questions about how the product worked and how it accounts for different scenarios. Sidewalk Labs staff clarified that while the product relies on anonymized cell phone location data to learn about travel patterns and create models, this data is used to create a synthetic population that is not linked to individual people. The tool differentiates between different trip purposes, and only counts the primary mode of travel. Participants suggested various ways to make the tool more accurate. [Editorial note: Although Replica was demonstrated to the advisory group, the technology is not currently part of the Sidewalk Toronto project].

Streets for People Building on AV Capabilities

Given the time spent on the previous items in the agenda, and participant interest in discussing Replica, it was decided to table the conversation on Streets for People for a subsequent meeting. The project team quickly showed a few graphics to convey the team's thinking regarding the ways in which the design of streets and the surrounding streetscape can leverage the benefits of AVs for all people.

Next Steps and Adjourn

The project team will keep the working group apprised of announcements regarding the near-term mobility demos.

The next meeting for the working group is currently scheduled for July 16, 2018. Given the mid-summer timing of this meeting, the project team will poll the group's availability for this date—and potentially a couple of alternative dates and/or approaches for sharing information—with the aim to move forward as scheduled.

The next in-person meeting of the advisory working group will likely take place at 307 Lake Shore Boulevard East (“307”), the new Sidewalk Labs office and experimental workshop space that [recently launched with a public open house](#).



Sidewalk Toronto Mobility Advisory Working Group

Meeting 4: August 14, 2018

307 Lake Shore Blvd E

Background

This was the fourth convening of the Mobility Advisory Group, following the inaugural meeting on March 20, 2018, a conference call on May 3, 2018, and a meeting on June 19, 2018. This meeting was hosted at Sidewalk Labs' new office and experimental workshop space at 307 Lake Shore Boulevard (307), preceding Roundtable #3 later in the evening at the same venue.

The slide deck for this meeting was shared with participants ahead of time to enable an initial review of the materials prior to the meeting. As noted in the agenda, the project team structured the meeting to allow participants to choose the topical areas for discussion following updates on the Plan Development Agreement (PDA) and the project timeline. The group selected "Streets for People" as topic 1, and "light rail transit (LRT) extensions and the transit backbone" as topic 2. The meeting concluded with a tour of the 307 space.

Introductions, PDA, and Project Updates

Following introductions and an overview of the agenda, the project team opened the meeting by informing participants about the PDA, providing an update on the project timeline, and discussing the role of the working group.

- PDA
 - On July 31, 2018, Waterfront Toronto (WT) and Sidewalk Labs (SWL) signed and released the PDA. The agreement defines the relationship between the two organizations and establishes the governing structures for the creation of the Master Innovation and Development Plan (MIDP), which will include a comprehensive plan for Quayside and may also bring forward proposals for consideration at scale. The full PDA is available on the Sidewalk Toronto website. [Ed note: [PDA can be found here](#), and an [FAQ about the PDA](#) can be found on the Waterfront Toronto site].
- Project timeline
 - Roundtable #3—scheduled for August 14, 2018 and August 15, 2018—will feature an overview of three building blocks of Quayside (i.e., public realm,

mobility/streets, and buildings), and Sidewalk Labs will present the draft site-specific plan at Roundtable #4 in late 2018.

- The draft MIDP is scheduled to be released in early 2019, at which time Roundtable #5 will offer an opportunity to submit feedback on the draft MIDP.
- The final MIDP is scheduled to be published in Spring 2019, and the PDA specifies that the completed MIDP must be approved by the Board of Directors of both WT and SWL by September 30, 2019.
- Role of the working group:
 - The project team summarized the role of the working group as set forth in the Terms of Reference, noting that the mandate of the group is to provide a forum for feedback, guidance and advice to the project team on mobility issues throughout the public engagement process. This includes reviewing and discussing key inputs to the MIDP.
 - Specifically, the role of the group is to:
 - Act as a source of external expertise for the project team with which to share and discuss ideas and findings;
 - Provide guidance, critiques and suggestions on proposed approaches, concepts and designs;
 - Consider and convey the perspectives of relevant constituencies and stakeholders;
 - Provide a sense of the broader community's reactions and concerns and explore how these might be addressed; and
 - Provide feedback on any other relevant matters that the project team refers to the group for comment.

The project team also mentioned that following a recent transition in leadership at WT, there is a three-person interim leadership team in place, including Michael Nobrega (Acting CEO), Meg Davis (Chief Development Officer), and Helen Burstyn (Chair of the Board). Additional details are included in a July 4, 2018 [media statement from WT](#).

Below is a summary of questions from participants and the corresponding responses from project team representatives during this portion of the meeting:

- Question: What is the role of the Toronto Transit Commission (TTC) with respect to the PDA?
 - Answer: The TTC is not explicitly identified in the PDA, but is a key stakeholder in the SWT project. There is ongoing conversation with TTC about advancing the transit component of the SWT mobility vision.

Topic 1: Streets for People

Project team members started this portion of the meeting by presenting the vision for “people-first streets,” including assumptions about autonomous vehicle (AV) behavior and an overview of proposed street typologies. Much of this content will also be presented during the upcoming Roundtable #3.

- Streets for people comprise one of six mobility systems in the SWT mobility vision, and the goal is to redesign urban streets for all users to take full advantage of AV benefits and make streets dynamic.
- Today, many streets are designed to cater primarily to throughput of automobiles, and pedestrians are often left with unsafe and/or inconvenient accommodation, for instance in the form of narrow sidewalks.
- There are some examples around the world of people-centric streets, and Toronto is on the leading edge. Building upon the policy context of the Complete Streets Guidelines and Vision Zero initiative, the City of Toronto has experimented with innovation as part of the King Street Pilot, at the St. Lawrence Market, and on Queens Quay West in collaboration with WT.
- The approach to reimagine streets as a flexible public realm with greatly increased pedestrian use is enabled by a combination of technology, design, and policy.
 - Assumptions about AVs underpin the vision of streets for people, and several features of AV behavior (e.g., reduced stopping distances and vehicle spacing) are outlined in the *Blueprint for Autonomous Urbanism*, published by the National Association of City Transportation Officials (NACTO) in 2017.
 - The SWT project provides the opportunity to redefine the rules of engagement with AVs, by designing the streets around people and forcing the AVs to learn a new paradigm.
 - Innovation in pavement technology--such as the ability to dynamically signal changes in road use throughout the day using LED lights--can allow for the efficient and safe allocation of right-of-way space to different users at different times, thereby bringing to fruition a key design feature of the AV streetscape. Additionally, modular pavement--in the form of precast slabs--creates the ability to upgrade and evolve the streetscape as new technologies emerge over time. Other functionalities of next-generation pavement, which are on display as a prototype at 307, include the ability to melt snow and ice (i.e., heated pavement) and absorb stormwater (i.e., permeable pavement).
 - Policies that enable and restrict access for different users of the roadway can reinforce the benefits of technology and design. For instance, while guaranteed access can be provided for those with protection under the *Accessibility for Ontarians with Disabilities Act (AODA)*, as well as for emergency vehicles, access restrictions and infrastructure solutions can be established for other

vehicle types or trip purposes (e.g., deliveries) to control vehicle use of a particular roadway and/or at a particular time.

- The project team envisions four types of streets that will collectively comprise a hierarchical grid of people-first streets:
 - The Boulevard is the widest street type built to accommodate through trips in cars or traditional public transit. It is the backbone of the street network along the perimeter and major axes of a neighborhood. As it keeps most modes separated and is the only street type that accommodates legacy vehicles, the Boulevard is most similar to existing streets.
 - The Transitway prioritizes public transportation but still provides space for shared AVs, pedestrians, bikes, and deliveries. It serves as a connector to other neighbourhoods and to Boulevards. Modes are still separated, but the width of sidewalks, bike lanes and pick-up/drop-off zones can contract or widen according to demand.
 - The Accessway is a narrower street that serves as a core part of the pedestrian-cyclist network, and is designed for traffic (including AVs and delivery modes) moving no faster than cycling speeds. Dynamic pavement facilitates movement by cyclists and pedestrians.
 - The Laneway is designed for traffic moving at pedestrian speeds, including low-speed AVs for people with accessibility needs, and all space is shared.
- Together, these street typologies form a network that restricts top speeds, retains vehicular access to all buildings, provides access to every street for AODA users as a priority, and manages space according to the relative demand of different users.
- In applying this conceptual approach to Quayside, Queens Quay East (and specifically east of Parliament Street) presents a unique opportunity to design a new urban street as opposed to retrofitting an existing street.
- The project team presented cross-sections of five potential options for how right-of-way space along Queens Quay East could be allocated to different users, ranging from the most conventional (option #1) to the most innovative (option #5), as follows:
 - Option #1: This option caters most to the automobile by maximizing the number of travel lanes, with no dedicated right-of-way for cyclists and the narrowest sidewalks for pedestrians (compared to all other options).
 - Option #2: This option is similar to Queens Quay West, which represents a great advance in urban street design. Compared to option #1, this option allocates more space to pedestrians in the form of wider sidewalks, adds a bicycle path, and reduces the number of lanes dedicated to vehicular travel, thereby making the street less of a thoroughfare.
 - Option #3: This option further expands the space dedicated to sidewalks, adds dynamic functionality to the roadway (i.e., enabling pick-up/drop-off at certain times of the day without permanently taking space out of the pedestrian realm),

removes the turning lane, and enables passing in the TTC right-of-way. For this option (and the subsequent options), the intersecting north-south streets would play an important utilitarian role in ensuring parcel-specific access no longer provided by Queens Quay East.

- Option #4: This option positions Queens Quay East as a one-way road with only one travel lane. The resultant increase in sidewalk width begins to change the feel of the space to be more like a plaza, with opportunities for programming, cafes, and other pedestrian-oriented uses.
- Option #5: This option caters most to pedestrians by maximizing the sidewalk width and leveraging the benefits of AVs. Specifically, this cross-section depicts right-of-way shared between LRT and AVs, and no dedicated lanes for vehicles. This option assumes advances in technology and communication that enable AVs to use LRT right-of-way without delaying the transit service.

Below is a summary of questions from participants and the corresponding responses from the project team during this portion of the meeting:

- Question: What is the distinction between options #4 and #5 for the sample Queens Quay cross-section?
 - Answer: The key difference is that whereas a dedicated travel lane is included in option #4, all vehicular travel (restricted to AVs, with exceptions for emergency vehicles/AODA) would take place within the TTC right-of-way in option #5.
- Question: Has the project team's transportation modeling work included any analysis of pedestrian/cyclist deaths and/or traffic congestion on Queens Quay? This data could potentially help to support a proposal to restrict vehicular access on Queens Quay (i.e., by improving safety and eliminating the use of Queens Quay to circumvent Lake Shore Boulevard).
 - Answer: Safety and convenience are two examples of metrics that are of interest. The project team is ramping up the transportation modeling work by applying several modelling tools to determine how to optimize street design. The project team welcomes feedback from the group regarding mobility-related metrics that should be considered in the MIDP.
- Question: Has there been any consideration for adding lights to the existing signage on Queens Quay to improve visibility? For example, King Street has brightly illuminated signs to convey left turn restrictions (in addition to the standard signage to comply with the *Highway Traffic Act*).
 - Answer: Lighting has not been considered to date (and much of the signage is standardized across the Province), but WT has conducted some on-the-ground assessment of existing signage and makes occasional modifications. For instance, WT will soon pilot a change to the location of push buttons at the corner of Bay Street and Queens Quay.

- Question: If vehicular access is restricted along Queens Quay East, how will residents get access to their cars?
 - Answer: The question of whether and to what extent through traffic would be restricted along the new portion of Queens Quay East (between Parliament Street and Cherry Street)--and the localized implications for parking supply and access--is a matter of ongoing analysis. For instance, the project team is looking at origin/destination pairs for auto trips to understand whether travel along Queens Quay is principally for throughput or local access. Another lens through which the SWL team is exploring this question is by comparing car ownership patterns and car usage patterns, which can inform whether off-site parking could be a viable solution (i.e., for those individuals who only infrequently use their cars).
- Question: Does the project team have budget to conduct in-person surveys that can provide insight into the distinction between existing car usage and car ownership in the area, as well as an understanding of what could incentivize car owners to give up their car? This could also be an opportunity to engage local students to help with the SWT project.
 - Answer: Depending on the takeaways from the project team's ongoing analysis and other considerations, it could be possible to explore a follow-up opportunity to conduct in-person surveys.

Participants also offered additional comments, as summarized below:

- AVs can help to reduce collisions and be part of the solution for roadway safety. Anecdotally, a friend crashed into a streetcar because she was not paying attention, which presumably would not have happened with an AV.
- Despite the advances made in the design of Queens Quay, it has some shortcomings, including:
 - There is an indistinct nature of barriers between modes, so pedestrians seem to spill over everywhere.
 - The street is very wide with no refuge, which makes crossing the street both inconvenient and potentially unsafe for pedestrians.
 - In designing streets for people, the project team should continue to think about where and how pedestrians cross the street and how the reclaimed space will be used.
- If the desired intensity of bike traffic is achieved, it could become harder for pedestrians to cross the street. This is already the case in some Dutch cities.
- Some of the team's policy recommendations will presumably be applicable outside the SWT site, such as incentivizing use of transit to get people out of their cars.
- It seems unlikely that all four street types would be present in Quayside given the small size of the site, and the project team should also keep in mind that the designs of Cherry

Street and Commissioners Street have already been determined in prior planning work. Additionally, the notion of a transitway that permits use of the roadway by AVs but not traditional vehicles is not feasible for Quayside given the timeline for this development.

- From a strategic messaging perspective, the Toronto Islands (and specifically the restrictions on auto use) could be cited as a source of inspiration for the SWT mobility vision.
- The discussion has mostly focused on residents, but should also consider visitors and employees of the Quayside site. The area should have attractors and be a place that interacts with the City.
- It is not realistic to assume that people coming from or going to places like Scarborough, Don Mills, and North York will have AVs.
- An additional technology idea that could be considered by the project team is pavement that charges electric vehicles and/or bikes.
- The project team should consider identifying--perhaps as part of their modeling work--a logical limit on the density of pedestrians at which point AVs can no longer operate on a given street.
- In the slide deck, the project team should show graphics of the same street with different usage patterns at different times, as opposed to showing different streets (i.e., some in Toronto, and some elsewhere around the world). For example, the team should consider showing Market Street during events (with pedestrians everywhere) contrasted with the same street during the week (when it operates as a thoroughfare). In discussing these different uses of the same street at different times, the project team should acknowledge that certain scenarios cannot be predicted (e.g., due to levels of demand, weather issues, etc.), and address how such unanticipated events would be accommodated.
- People who are visually impaired may not want to access the waterfront because they will not feel safe. In general, the idea of a shared, dynamic space is not necessarily an inclusive design. Predictability is an important attribute that should be considered.
- Regarding the sample cross-sections for the future of Queens Quay East:
 - In making their recommendations, the project team should be cognizant that the issues of design and access across Queens Quay have been studied for a long time, and prior work should be incorporated into the team's thinking.
 - The cross-sections should show more heterogeneity in travelers (i.e., not just cars, bikes, and transit). For instance, the cross-sections should demonstrate how people in wheelchairs, electric scooters, and other modes would be accommodated, keeping in mind that these modes may require different right-of-way widths. Additionally, the cross-sections only show personal transportation, and should consider different modes for freight (e.g., robotic vehicles, e-assist cargo bikes, etc.)
 - The project team should show the interaction of different modes from multiple vantage points (i.e., not just in a cross-section), such as in plan view along the

street (e.g., at an LRT stop) as well as at intersections, most notably to visualize how cyclists/pedestrians are accommodated.

- The project team should be ready to get pushback from the public when showing options that reduce the number of travel lanes (even though many people using the lanes do not actually live in the area).
- It would be interesting to use the model to determine which cross-sections offer the greatest benefits to each mode.
- If possible, the project team should try to avoid designing a bidirectional bike lane, and instead locate bike lanes on opposite sides of the street, which can improve predictability and reduce conflicts. Regardless, five metres is not a sufficient width for a bidirectional bike lane, and bike lanes should also be wider to accommodate scooters and other modes that may be considered to operate in this portion of the right-of-way.
- The cross-sections should show greater separation between bikes and pedestrians--and possibly add planters and/or bollards--to increase comfort and safety.
- The TTC right-of-way is quite wide, and it will likely be the least used of the spaces because there will be many times when there is no LRT present (given the anticipated frequency of service).
- The trees shown in the cross-sections are very mature and not moveable. The project team should be mindful of what is conveyed in the graphics if they want to discuss flexible elements of the streetscape.
- Regarding whether the project team should continue to explore option #5:
 - The team should not drop this from consideration because the goal is to be visionary. The cross-section is definitely worth pursuing, and the innovation can follow to help make it happen.
 - This cross-section sets the bar for what a street could potentially be, and even if the likelihood is small, it is still a good idea to propose these ideas.
 - It may be appropriate to start introducing this idea once development happens on the site.
 - Although this is not specific to option #5, concern regarding the very wide crossing distance of Queens Quay will need to be addressed.
 - The availability of AVs is critical to the success of option #5. If the street is built in a modular way, it could be possible for the cross-section to evolve over time. For instance, the street could be built to reflect option #3 and then transition to option #4 or #5 at a later date. This phased approach could also make sense because AVs are not anticipated to be immediately available.

Topic 2: LRT Extensions and the Transit Backbone

The project team started this portion of the meeting by informing participants about the project team's vision for extension of the LRT network, and subsequently solicited input from the group about options for implementation.

- The SWT mobility vision calls for knitting into the City of Toronto through the existing high-volume, backbone LRT system.
- The vision for LRT extensions along the eastern waterfront is consistent with local and regional plans, including the Port Lands Planning Framework, Port Lands + South of Eastern Transportation + Servicing Master Plan (TSMP), Waterfront Transit Network Plan, and Metrolinx's 2041 Regional Transportation Plan.
- The success of the future waterfront development depends on the availability of convenient, high-capacity, and high-frequency transit. Queens Quay East and the connection from Queens Quay to Union Station are expected to generate significant transit demand.
- Despite the identified need for LRT extension, the timeline for implementation is uncertain, as there is currently no committed funding and it is unclear when funding could be made available given other, higher-priority transit projects (e.g., Relief Line, Scarborough Subway Extension, etc.)
- Whereas a traditional funding package would include a 1/3 share of the cost by each level of government (i.e., Federal, Provincial, and City shares collectively comprising the total cost), it may be possible to access private financing to accelerate construction. [Ed note: Language describing financing in the subsequent notes changed from previous meetings, reflecting changes in the project team's thinking.]
 - One way to generate private contributions would be to seek incremental funding from new development by establishing transit benefit districts which would levy an on-top fee based on either developable parcel area or developable gross floor area.
 - Hudson Yards in New York City is a recent example of such an approach, which linked real estate development and infrastructure finance, although there were local nuances that would not necessarily be applicable to the Toronto context for LRT extensions (e.g., payments in lieu of taxes).
- In addition to different options for financing, there are also different options for how to build the LRT extensions, and specifically whether to build the entire network through the Port Lands or just connect to Quayside (via an extension of the 509 along Queens Quay East and/or the 514 along Cherry Street).
 - These options for the LRT extensions have different implications for construction cost, the ability to induce private financing, ridership potential, operational efficiency, accessibility to the City at large, and other network-wide benefits.

- Some of the greatest costs would be associated with the connections to Quayside, specifically regarding the Union Station connection (for the 509 extension) and the expansion of the Cherry Street underpass (for the 514 extension).
 - In comparing the two possible connections to Quayside, the 509 extension poses additional complications due to the challenge of inducing private contributions (because much of the land along Queens Quay is already committed to development) as well as modal uncertainty for the Union Station connection (i.e., funicular vs. rebuilt tunnel for LRT).
 - This raises the question of whether an implementation strategy should include or exclude the 509 extension.
- Accordingly, there are several options for how to proceed with LRT implementation, including different combinations of public and private sector funding as well as LRT alignment alternatives.

Below is a summary of questions from participants and the corresponding responses from the project team during this portion of the meeting:

- Question: Will the bridges constructed as part of the Port Lands Flood Protection and Enabling Infrastructure project accommodate the envisioned LRT extensions?
 - Answer: As currently scoped, only the Cherry Street north bridge will be built to accommodate future LRT use (i.e., through construction of two separate bridges, one for vehicular traffic and one for LRT), as both the Cherry Street south bridge and Commissioners Street bridge will be built for vehicles only.
- Question: How will the project team address concerns regarding potential overreach associated with the vision for LRT network extensions beyond Quayside?
 - Answer: The PDA clearly differentiates between the type of planning that can be considered for Quayside and planning opportunities that can be considered at a larger scale in the MIDP. Any ideas proposed more broadly than Quayside must be in service of achieving the shared goals of the project and be supported by a business case demonstrating the need for scale to achieve the objectives. Additionally, to proactively address potential concern, the project team is interested in feedback from the working group (reflecting the perspectives of the relevant constituencies, stakeholders, and the broader community) on whether it would be appropriate for the MIDP to include a proposal for funding the LRT extensions into the Port Lands.

Participants also offered additional comments, as summarized below:

- Regarding whether it would be feasible and desirable to leverage private capital for construction:

- If innovative approaches are not pursued, then the project would fall short of expectations.
- Provision of equal shares by all three orders of government seems unlikely given the current fiscal climate, and so it seems to be the right time to consider different financing options.
- The project team materials must more clearly distinguish between funding and financing.
 - Beyond this distinction, the team should consider specifying potential partnerships (e.g., with new mobility services).
- There is an existing by-law regarding development charges (i.e., translated into a per square metre charge [for commercial] and a per unit charge [for residential]), and so there is already a mechanism in place to generate private contributions for the capital costs of infrastructure.
 - The project team needs to think about about how this idea for development charges intersects with commitments to affordability. For instance, the units on the Quayside site would presumably need to be more expensive to make the overall finances work if a development charge is imposed. Broadly, there is a need to understand the implications for the SWL business model.
 - The project team should consider the opportunity for generating additional funds associated with increased density, as low- or mid-rise buildings will likely not generate sufficient funds. It could be worthwhile to discuss this with other developers active in the area. Development density can be a political third rail, and it is most important to make the tradeoffs very transparent.
- Though private participation in infrastructure investment generates excitement in some quarters, it prompts suspicion in others. For instance, the Eglinton Crosstown project has had some public-relations challenges due to lack of clarity about its P3 model.
 - The project team should be explicit that the vision is for TTC to own and operate the LRT extensions, and that union labour will provide that operation. It may be worthwhile to specify the typologies of private sector participation and show where this proposal falls on that continuum.
- To avoid adding more complexity with contracting, the LRT extensions should not be framed as a public private partnership (PPP), but rather a public project supported by development charges.
 - Nevertheless, there is an emerging success story of a design-build-finance-operate-maintain (DBFOM) project in the realm of transportation innovation that includes collaboration with a technology

company, transit operator, etc., which could potentially impart best practices and/or lessons learned for this project. IE, Montreal's REM.

- The project team should consider a potential role for Canadian companies, such as through sponsoring individual transit stations (e.g., as in Detroit).
- It is important to note that the transit demand forecast estimates for the Waterfront Transit Network Plan are specific to the AM peak hour, which offers insight into journey-to-work patterns.
- The Scarborough Subway Extension map should be updated to show the recommended solution.
- Developers on the waterfront report added difficulty marketing their buildings because of the delay of East Bayfront LRT.
- The map boundaries for a potential Eastern Waterfront Transit Benefit District should be modified to exclude areas that will remain as parkland or industrial use.
- If there is a desire to run buses on right-of-way that will eventually accommodate LRT, then the right-of-way should be wide enough to enable buses to safely pass without creating delays.
 - If Bus Rapid Transit (BRT) is considered as an alternative to LRT, it will be necessary to consider how BRT would connect to Union Station, what the reasonable upper limit of capacity may be, and what the effects on street design would be, compared to LRT.
- The project team should consider how the envisioned LRT extensions relate to the cross-sections of Queens Quay East as discussed in the previous section, as the cross-sections fundamentally change the nature of the street. For instance, option #5 (i.e., the sharing of right-of-way between LRT and AVs) would be very difficult given the LRT headways.
- The project team should not consider omitting the 509 extension from the list of LRT extensions, as there is a lot of existing/forthcoming development in the vicinity of Queens Quay (e.g., Corus, George Brown, Waterfront Innovation Centre) that warrants improved transit service.

Adjourn and 307 Tour

The meeting concluded with a tour of the 307 experimental workshop space, led by Carrie Jackson of Sidewalk Labs.



Sidewalk Toronto (SWT) Mobility Advisory Working Group

Meeting 5: Sept 26, 2018

307 Lake Shore Blvd E

The Sidewalk Toronto Mobility Working Group met for its fifth meeting on September 26, 2018.

Executive Summary

- Sidewalk Labs' Director of Data Governance and Privacy updated the group on the Sidewalk Toronto Responsible Data Use framework. They reviewed the framework's principles, as well as how Sidewalk Labs implements Responsible Data Impact Assessments for all projects proposed in Quayside.
- The project team asked for feedback on what type of transportation governance should be used in Quayside.
 - The group was broadly supportive of exploring new transportation governance models that combine the best elements of existing mobility governance systems with new models that are working globally.. Participants suggested that the transportation governance structure for Quayside should:
 - Have both operational and design responsibilities;
 - Consider users and their experiences and create a seamless experience;
 - Have clear goals and jurisdiction;
 - Be flexible enough to change to meet Quayside's needs;
 - Involve relevant local agencies;
 - Work towards developing and supporting local talent and institutional capacity; and
 - Have a clear funding stream and be financially sustainable.
 - Participants also generally agreed there should be transparency and public education around how the new agency would be funded and governed.
- The project team asked for feedback on preliminary freight delivery plans for Quayside.

- Participants broadly supported the plans, but suggested that the project team will need to do more consultation and coordination with industry to ensure it is feasible, particularly regarding the plans for off-hour deliveries which might be disruptive to businesses.
- Participants also suggested that this freight system provides an interesting opportunity to pilot freight solutions that could be scaled beyond Quayside.

Updates

The project team shared updates about the public engagement process to date, and discussed the proposed timeline for future public roundtables. They also provided an update on the MIDP release process.

Presentation: Privacy and Data Policy

Lauren Reid, a privacy consultant working on assignment with Sidewalk Labs, delivered a short presentation about the Sidewalk Toronto Responsible Data Use policy framework, which embeds ‘privacy by design’ principles to enable responsible use of data in the Quayside development.

Reid reviewed the project’s commitment to using data as a means to improve quality of life. She emphasized that the data use policy applies not only to personal, identifiable information, but to any data that could impact people. She then reviewed the Sidewalk Labs Responsible Data Impact Assessment process to date.

Reid also noted that the project team has ongoing and regular meetings with privacy regulators and different Sidewalk Labs and Waterfront Toronto advisory bodies.

The group then discussed how Sidewalk Labs will address issues of open data, meaningful consent, and collective rights. [Ed note: for more information, see [Sidewalk Labs’ proposal for a Civic Data Trust](#), the [latest examples of how data will be protected](#), and [Sidewalk Labs’ vision for digital infrastructure](#).]

Presentation: Transportation Governance

The project team has looked around the world for the most effective governance models to oversee the project’s different mobility components. They sought the group’s input on what structures might be most effective in the Toronto context. They asked for the group’s advice on which scenario might be optimal for Quayside.

- A participant noted that establishing guiding principles will be an important way to help decide what the model should look like and what objectives it should serve.
 - The participant suggested that one such objective might be to promote mobility solutions that are scalable across the entire Toronto region, which would mean

that the project team should look at a transportation governance structure that builds capacity in existing agencies. The participant also suggested that the right governance model might be different across different modes of transportation.

- A participant suggested that the project team think of Quayside's mobility systems as an ecosystem. They also cited examples like the MAAS Alliance in Europe as a model for public-private multi-modal mobility as a service, and suggested looking at it as a possible inspiration for Canada.
- The participant also emphasized the importance of seamlessness in the user experience of moving through the mobility system and suggested charting out how this integration would look. The participant suggested the project team needs to consider all enablers to access. This could be accomplished through getting stakeholders together to do a mapping exercise to visualize how a user experiences the system, and then tweak the system to meet needs.
- A participant asked how the project team would be able to attract and maintain the interest of high-level stakeholders in being a part of a new type of transportation governance model, given the small scale of Quayside.
- A participant suggested that a governance structure could have a temporary mandate. This would enable it to take on oversight of Quayside's mobility systems without burdening existing agencies, but the 'sunset clause' would create an incentive to build local capacity over the long term.
- A participant asked about financing and possible public perceptions around it. They noted that the extra cost of maintaining neighbourhood mobility systems in Quayside might be perceived as unfair to other taxpayers in the city, even if the money is mostly coming from the private sector.
 - The project team suggested that education would be important to help the public understand any proposed operation and funding model for Quayside, and potential benefits for the rest of the city.

Presentation: Freight and Goods Movement

The project team presented phase one and two plans for Quayside's freight system. The system aims to separate freight from passengers to reduce conflict on roads.

Phase one will focus on encouraging off-hour deliveries and cargo bikes for first and last mile delivery to move goods to and from Quayside. Within Quayside, mobile delivery lockers will be used for storing packages, and delivery robots will be used to move goods the final distance. This system enables delivery at all times of the day. Phase one aims to reduce truck delivery traffic, and will keep loading docks on the periphery of the neighbourhood.

The next phase of the system would incorporate a consolidation centre and logistics hub to receive all freight in Quayside, and then use a system of autonomous smart containers and a tunnel system between the building network to move items.

- A participant complimented the idea of the consolidation centre's potential item borrowing function, and suggested that the project team may be able to find other ways to help residents of Quayside reduce the amount of objects they own.
- A participant suggested the project team will need to consult with industry because many businesses would likely need to change their practices to accommodate this new way of moving freight. (For example, shredding companies who are required to shred documents in their trucks on-site.)
- A participant noted that when it comes to measuring the success of a freight system, this project provides a broader opportunity to test and demonstrate new solutions (such as freight on transit) that may be very cost effective and scalable.
 - A participant added that this demonstration could create greater demand among the rest of the citizens of the city to have equally efficient systems.



Sidewalk Toronto (SWT) Mobility Advisory Working Group

Meeting 6: November 9, 2018

Background

This was the sixth meeting of the Sidewalk Toronto Mobility Advisory Working Group following the inaugural meeting on 2018-03-20, a conference call on 2018-05-03, and meetings on 2018-06-19, 2018-08-14, and 2018-09-26. This meeting was hosted at Sidewalk Labs' office and experimental workshop space at 307 Lake Shore Boulevard (307).

The slide deck for this meeting was shared with the group ahead of time to allow advance review of these materials.

Sidewalk Toronto Project Update

Following introductions and an overview of the agenda, the project team provided an update on the overall Sidewalk Toronto project and timeline.

Below is a summary of questions from the advisory group and the corresponding responses from the project team during this portion of the meeting:

- Question: How much work has been happening with TTC?
 - Answer: The SWT project team has been involved in group discussions with TTC, in conjunction with City of Toronto Transportation Planning Services. Discussions topics have included:
 - Timing, scope and alignment of LRT;
 - Impact of any street design on TTC operations
 - Impact of AV's on TTC operations in the future.

Update on Previous Items

The project team then provided an update on previous items of discussion, including the Civic Data Trust proposal, the Transportation Governance, and the light-rail transit.

Civic Data Trust:



- The reaction to the release of Sidewalk Labs' Civic Data Trust proposal has been mixed, with general support of the concept, and some with concerns about specific details.
- SWL's proposal can be found [here](#). [Ed note: for more information, also see the [latest examples of how data will be protected](#), and [Sidewalk Labs' vision for digital infrastructure](#).]

Below is a summary of questions from the advisory group and the corresponding responses from the project team during this portion of the meeting:

- Question: How much more sensitive data would be collected by SWL than is already collected? Are the sensors SWL proposes really that much more substantial than anything in place already?
 - Answer: This is not more than is already collected. SWL recognizes that people are not always informed enough about what data is already collected in public spaces and how that data is being used. SWL does not intend to substantially increase the amount of sensors in public spaces. SWL does intend to be transparent about the placement of these sensors and the data that they collect and to be smarter about how this data (from existing or new sensors) is used.
- Question: Would the Civic Data Trust's governance structure include Alphabet?
 - Answer: As long as SWL is not treated differently than any other party, we will be happy with and participate with any responsible governance structure that is put in place

Transportation Governance:

- At the 2018-09-26 meeting, the group discussed potential models for transportation governance to serve the Sidewalk Toronto project's unique mobility needs;
- The project team has incorporated advisor feedback from the last meeting which included opportunities and challenges regarding potential transportation governance options in Quayside.

Below is a summary of questions from the advisory group and the corresponding responses from the project team during this portion of the meeting:

- Question: Why isn't advertising or commercialization of data not included in revenue source potential?



- Answer: While there may be advertising revenue potential there, it is not a priority and does not feel like a worthwhile source to pursue.

Members of the advisory group also offered the additional comment that incorporating a points or rewards system early on seems prudent.

LRT:

- The project team updated the group that they are no longer exploring alternative Waterfront LRT alignments, though in some cases, depending on development patterns, they plan to propose additional segments to be added to the approved ones.

Below is a summary of questions from the advisory group and the corresponding responses from the project team during this portion of the meeting:

- Question: Has SWL had conversations with the Province about the proposal?
 - We have had high-level conversations with all levels of government about the ideas we are working on.

The Mobility Network and Quayside Site Plan

The project team updated the group about the vision for the mobility aspect of the site plan, and solicited input from participants about the plan, especially the implications for freight, automobiles, and modeling. SWL reviewed some of the potential road alignments and mode share for the site, gave an update on the latest plans for handling freight through a central 'logistics hub' and consolidation centre, and briefly discussed how private vehicles would be managed to restrict their presence in Quayside.

Group members had several questions following the presentation:

- Question: Would SWL disallow freight vehicles that don't want to use the consolidation centre?
 - Answer: No. SWL acknowledges that there would be exceptions in special circumstances, but would require special permits or permissions
- Question: How does SWL consider scooters or other "new" modes of transportation in this plan?
 - Answer: By the time Quayside opens, the technology will be at least two generations ahead of where it is now, so SWL is considering these modes to the



extent possible (e-bikes, etc), but is not currently making specific accommodations for what this might look like.

- Question: There is already a shortage of bike parking, but with scooters, etc. there will be more demand for these areas as well as an issue around mixed speed uses in bike lanes. How is SWL considering this?
 - Answer: SWL has only considered non-resident bike parking in this plan, as residents will have bike parking in their basements. SWL is designing the streets of Quayside to be dynamic, and is optimistic that they can be adjusted to accommodate for increased/changing demand

The project team also posed a question to participants regarding whether piloting a heated bike lane through Queens Quay would be a worthwhile idea.

- Participants felt this would be attractive for not only bikes, but also pedestrians, runners, and parents, so capacity would need to be considered.
- Participants also raised the question of how the concept would scale.

SWL responded that in studies, the heating function is actually not bad for energy consumption if it is properly managed.



**Sidewalk Toronto Mobility Advisory Working Group
Meeting 7: December 19, 2018
307 Lake Shore Blvd E**

Background

This was the seventh and final convening of the Mobility Advisory Working Group, following the inaugural meeting on March 20, 2018, a conference call on May 3, 2018, and meetings on June 19, 2018, August 14, 2018, September 26, 2018, and November 9, 2018. This meeting was hosted at Sidewalk Labs' office and experimental workshop space at 307 Lake Shore Boulevard (307).

Review of Roundtable 4 Comments

Following an overview of the agenda, the project team opened the meeting by providing the group with a brief summary of public feedback from Roundtable 4 and requesting comments from participants.

- The project team noted that public reception to Roundtable 4 was generally positive, but more specific on the feedback would be released in the summary report soon.
- Roundtable participants' attention did not focus on on transit extensions, but on heated bike paths.
- Roundtable participants also felt that the project team should have made explicit allowance for maritime transit off of Parliament Slip.
- Waterfront Toronto's perception of the public feedback was that it struck a generally good tone, but observed that many comments or questions people had centered on content that was not included in the presentation. The public may have perceived gaps in the SWT plans since many of the plan's elements were not the focus of the presentation. These gaps have been acknowledged, several of which will be addressed in the MIDP.

Below is a summary of questions from participants and the corresponding responses from the project team during this portion of the meeting:

- Question: The Villiers Island Precinct Plan does make reference to using Parliament Slip for maritime transit. Is SWL planning to look into this idea?

- Answer: SWL had not planned to use Parliament Slip for this. It is currently being considered for use by pleasure craft.
- Follow up question: Has anyone looked into the feasibility of this concept?
 - Answer: TTC has looked into it on two occasions, but both times they have come to the conclusion that it is too expensive to justify as a mode of transportation. WT is trying to protect the area for a smaller scale water taxi network and recognizes that demand between the Central Waterfront and Villiers Island may increase in the future, once Villiers island is developed.

Presentation: Parliament Plaza Criteria

SWL started this portion of the meeting by laying out what SWL's preference is with respect to the road network, and distinguishing this position from what the current Precinct Plan calls for.

- SWL is still most excited about the potential to prioritize pedestrian and cycling traffic at the Parliament/Queens Quay connection, which would mean a change to the current Precinct Plan that currently allows personal vehicle traffic.
- In the coming months SWL will be working with the City of Toronto to determine which criteria should be used to make this decision.

SWL then requested participant input on whether they are considering the right criteria by which to consider alternatives, and what might be missing from or incorrect about the criteria.

Below is a summary of suggestions or clarifications from participants and corresponding responses from SWL during this portion of the meeting:

- Question: Would "option" be a better word to use here than "alternative"?
- Question: Could there be some sort of measure of how seamlessness contributes to people's confidence in the network?
 - Answer: We will consider how to measure this.
- Question: Has there been any consideration for adding lights to the existing signage on Queens Quay to improve visibility? For example, King Street has brightly illuminated signs to convey left turn restrictions (in addition to the standard signage to comply with the Highway Traffic Act).
 - Answer: Lighting has not been considered to date (and much of the signage is standardized across the Province), but WT has conducted some on-the-ground assessment of existing signage and makes occasional modifications. For instance, WT will soon pilot a change to the location of push buttons at the corner of Bay Street and Queens Quay.

Participants also suggested additional criteria by which to evaluate alternatives, as summarized below:

- How will alternatives affect relative and projected speeds that vehicles will be traveling?

- While they appreciate Vision Zero, one participant felt that vehicle speed should be more explicitly addressed.
- Consider air quality and exposure to pollutants and idling vehicles.
- Noise (often present in f European criteria and worth considering here)
- To what extent is seamless, intermodal transfer encouraged by the alternative?
- Can the alternative accommodate an increase in freight and commercial vehicles?
- How much destination retail does the alternative encourage?
- How much does the alternative support the back-end of operations of retail outfits efficiently and effectively?
- How well does the alternative provide for existing and planned cycling infrastructure?
- How well are desire lines served by the alternative?
- To what extent does this alternative increase noise pollution?

Presentation: Overview of 2019 mobility activity, and call for volunteers

SWL staff updated the group on SWL's plans through the drafting and release of the MIDP.

- SWL will continue working on a draft of the MIDP through early 2019.

Wrap up: Dissolution of the Advisory Working Group

The meeting concluded with the formal dissolution of the working group, with the understanding that as questions arose in specific areas, the project team would seek to engage with individual members to inform the MIDP in their areas of expertise (if they had time and interest in doing so).