

Smart City Strategic Planning in North America: Learnings for London

Emily Middleton

Master in Public Policy candidate, Harvard Kennedy School of Government

Presented to:

Theo Blackwell and Stephen Lorimer
Greater London Authority

May 2018. Written as an input for “A Smarter London Together”, the Smart London Listening Exercise.

Table of Contents

- Executive Summary*2**
- Introduction*3**
 - Cities and methodology3
 - How this report is organised3
- Key findings*.....4**
 - The *process* of smart city strategic planning4
 - The *content* of smart city and digital strategic plans6
- Case Studies*7**
 - The City of West Hollywood.....7
 - Kansas City, MO9
 - Montréal.....11
 - Vancouver.....13
 - New York City14
 - Boston15
 - Toronto.....17
- Conclusion*19**
- Acknowledgements.....20**
- References20**

Executive Summary

This document is a contribution to **“A Smarter London Together”**, the listening exercise for the next Smart London Plan launched by the Smart London Board and the Chief Digital Officer for London. This report has three aims: first, to present the latest trends in smart city strategic planning in North America, and second, to identify the main themes in the digital priorities of these cities. Third, it aims to highlight learnings from other cities that are relevant for London. It is based exclusively on the experiences of seven cities in the United States and Canada: New York City, Toronto, Boston, Kansas City, Vancouver, Montréal and the City of West Hollywood. The research was conducted primarily through interviews (chiefly with senior city officials in technology and innovation departments) and by reviewing the cities’ strategy documents.

This report describes six recent trends in the smart city strategic planning process:

- 1) ***Faster tech development = frequent iteration + flexibility.*** As **tech accelerates**, cities are adapting their strategic planning in two ways. Plans become living documents, and tech offices preserve some flexibility to pursue opportunities that are difficult to anticipate.
- 2) ***Smart phasing helps.*** Thoughtful phasing integrates policy and delivery initiatives, front-loads capacity-building in people and infrastructure, and builds internal momentum.
- 3) ***Residents are central, but meaningful collaboration is difficult to get right.*** City technology offices aim to be user-centred, but productive collaboration can require experimentation.
- 4) ***Tech sector collaboration is growing more intentional.*** Cities are trying to get more out of industry collaboration – for instance by issuing playbooks and hosting challenges.
- 5) ***Cities are using competitions as a catalyst for idea generation and engagement – but this tends to put strategic planning on hold.*** Canadian cities are responding to the Canadian national Smart Cities Challenge – which is resulting in many ideas, but less time for planning.
- 6) ***The decline of smart city master plans?*** Boston and New York City are eschewing digital master plans – but are aided by strong tech coordination functions and innovation teams.

This report also highlights on five main themes in the digital priorities of cities:

- a) ***Next-level city data:*** how to more effectively use city data and increase openness.
- b) ***Data privacy and security:*** investing in safeguards through policy, talent and processes.
- c) ***Digital infrastructure investment:*** data infrastructure, connectivity and smart city tech.
- d) ***Digital inclusion, redefined:*** a more expansive notion incorporating attitudes and skills.
- e) ***Tech sector economic development (for large cities):*** tech as an engine of city growth.

Short case studies for each of the seven cities show how these trends and themes play out in practice. Particular attention is given to specific strategies cities have used to develop their plans and advance their priorities. Each case study also includes learnings for London.

The report concludes with some take-aways for the Smart London Board. First, thoughtful phasing – combined with built-in capacity to regularly iterate the Smart London plan – can help mitigate uncertainties. Second, meaningful engagement with citizens, tech companies and other city agencies requires diverse methods and experimentation. Collaboration should become a mindset, not just a step in the planning process. Third, periodic digital master plans may not always be necessary, as digital becomes more strongly embedded throughout the GLA family and across boroughs. But to get there, London likely needs a strong coordination function, and dedicated resources for innovation. This is another reason to support the proposed London Office of Technology & Innovation. Finally, Smart London’s five priorities are shared by other cities – as concrete initiatives are scoped out in the new Plan, London should look to learn from and partner with cities with similar agendas.

Introduction

This paper is a contribution to [“A Smarter London Together”](#), the listening exercise for the next Smart London Plan. It was written at the request of Theo Blackwell, Chief Digital Officer for London, and Stephen Lorimer, Smart London Strategy and Delivery Officer. It focuses on the recent experiences of cities in North America with smart city or digital master planning. It builds on Stephen Lorimer’s recent [article](#) and his 2015 [working paper](#) on digital master planning in world cities with Anthony Townsend. The paper sets out to answer three overarching questions. First, what is the *process* other cities are using to develop their smart city strategic plans or to organise their technology initiatives? Second, what is the *content* of different cities’ strategic plans: what objectives or issues have they prioritised and why? Third, what lessons are there for London?

Cities and methodology

Seven cities were surveyed in the United States and Canada: New York City, Kansas City (Missouri), the City of West Hollywood, Toronto, Montréal, Vancouver and Boston. The research primarily consisted of two sets of activities. The first was interviews with city officials, and others involved in strategic planning. The second was reviewing cities’ smart city strategic planning documents. The seven cities vary significantly in population and budget; this reflects the belief that London can learn from cities of all shapes and sizes, not just its large peers. They also vary in their approaches to smart city strategic planning and are at different points in their strategic planning cycles. While one municipality has just published its multi-year smart city strategic plan (the City of West Hollywood), others are in the midst of developing a second version (Kansas City); and others have chosen not to develop a tech-specific masterplan (Boston and New York City). Yet each city has a unique set of experiences and can offer learnings for London.

How this report is organised

The paper begins by highlighting the key themes that emerged across cities, in terms of the smart city strategic planning process (pages 4-5) and priorities (pages 6). It then presents brief case studies of each city (pages 7-19). It concludes by summarising some important take-aways for the Smart London Board (page 19). An appendix lists the strategy documents consulted, and the interviewees who generously contributed their time and perspectives (page 20).

Key findings

The *process* of smart city strategic planning

This report highlights **six key trends** in the *process* of digital strategic planning in the North American cities surveyed:

1) *Faster tech development = frequent iteration + flexibility*

As [technological progress accelerates](#), cities are adapting their strategic planning in two ways. First, some cities are building in iteration from the very beginning by making their strategies “living documents”. As the City of West Hollywood’s Innovation Team insisted: “We will iterate every year and see what works and what doesn’t. We want to stay as nimble as possible”. Second, cities are striving to reserve some capacity for horizon-scanning and pursuing opportunities that are difficult to anticipate.

2) *Smart phasing helps*

When developing a digital strategy, cities often face significant challenges: limited tech talent, poor data infrastructure, and how to maintain internal buy-in over the strategy’s three-to-five-year duration. Careful phasing of initiatives can help. For instance, [Kansas City’s Digital Equity Strategic Plan](#) includes “quick wins” for every priority as well as longer-term plays, designed to demonstrate impact up-front and generate early momentum. Vancouver’s CIO Jessie Adcock [insists the city needs to focus on “foundational”](#) technological and organisational capacity-building before it can start to realise its vision of a “[smart, intelligent, connected, green city](#)”. The City of West Hollywood’s [plan](#) is notable for integrating policy and delivery initiatives. Policy recommendations – such as “adopt a smart city privacy policy” and “adopt IoT approval process” – are sequenced to learn from pilots but be in place before larger roll-outs.

3) *Residents are central, but meaningful collaboration is difficult to get right*

All cities strive to engage residents in their strategic planning and throughout delivery, but with varying results. Straightforwardly asking the public how different technologies should be used is not always effective. Stéphane Guidoin, Montréal’s Acting Director for the Smart and Digital City office, commented this approach could generate much work to “take ‘solutions’ and re-engineer them to needs”. Instead, Montréal has trialled multiple engagement methods to inform its digital planning. The city holds [open meetings for residents](#), hosted an [online “idea box”](#), and [analysed the city’s 311](#) calls to identify when, what and where citizens were encountering problems that technology could help address.

4) *Tech sector collaboration growing more intentional*

All cities engage with the local tech sector to some extent when crafting their digital plans. However, some felt it could be more intentional. For instance, the City of Boston issued the [Boston Smart City Playbook](#) with the aim of making engagement with prospective vendors more constructive for both parties. Some cities indicated that while initial input from industry had been valuable, this engagement had dropped off when the planning process was over. When this happens, it can be a “lost opportunity”, as industry can help city government keep up-to-date with the latest tech developments. Where economic development is also a priority for the technology department – such as Toronto and New York – engagement programs tend to be

most purposeful. For instance, Toronto's Board of Trade convenes a Smart City Working Group in partnership with the City's Economic Division and organises regular conferences, which is currently enabling local tech and non-tech companies to advise on the city's bid for the Canadian Smart Cities Challenge.

5) *Cities are using competitions to catalyse idea generation and engagement – but tend to put strategic planning on hold*

All the cities surveyed in Canada are responding to the federal government's [Smart Cities Challenge](#). This is seen cities as a helpful catalyst for ideation and engagement. Alexandra McDonough of the Canadian Urban Institute noted that some cities are planning to use their application as a foundation for their first (or next) smart city strategy document. However, responding to a high-profile national competition consumes considerable bandwidth, and most cities are postponing long-term strategic planning until it is over.

6) *The decline of smart city master plans?*

Boston and New York City are deliberately eschewing digital master plans. One reason for this is the speed of change, mentioned above. As the Deputy CTO of New York City, Jeremy Goldberg, commented: "Technology is developing so rapidly that if you spend too much time on strategic planning you [risk] designing a plan that may not be relevant in a year". But it's important to note three distinguishing factors common to both Boston and New York City, which likely facilitate this approach. First, digital technologies are well-integrated into their city-wide plans ([Imagine Boston 2030](#) and [One New York](#) respectively), enabling digital teams to use those as their guide. Second, both cities have strong, central coordination functions for digital (the [Boston Department of Innovation and Technology](#), and the [Mayor's Office of the CTO](#)). Third, they benefit from dedicated innovation teams, whose main responsibility is to experiment, test and iterate: Boston has the [Mayor's Office of New Urban Mechanics](#), and New York City has [NYCx](#).

Other factors

Investing time and resources in strategic digital master-planning entails a short-term trade-off: less bandwidth is available for delivery while the strategy is developed. If and when this investment is worthwhile – and how extensive it should be – heavily depends on the particular circumstances of that city: whether or not it has had a digital strategy before; its digital coordination capabilities, talent pool and capacity; the extent to which it can model its approach on similar or nearby cities; and its priorities (see below).

Additionally, most interviewees pointed to the level of commitment and style of the mayor (or the city manager depending on the form of municipal government) as having a significant influence on the city's strategic planning approach. Where a leader sees smart city technologies as core to his or her brand or legacy, cities were more likely to invest in a major strategic planning exercise and engage ample external stakeholders. In other cases, long-term strategic planning was likely to be de-emphasised. However, in all cases, the behind-the-scenes *support* of senior city leadership – through advocating for technology initiatives, and by authorising budget – was seen as an essential enabler for successful implementation.

The impact of upcoming political elections on the strategic planning process was mixed. Some interviewees felt it influenced the timeframe of some of the initiatives; others did not. Some cited the timing of their city's capital planning cycle as a key driver for the timing of their smart city strategy.

The *content* of smart city and digital strategic plans

There are **five main themes** regarding the *priorities* of technology plans and initiatives:

- a) **Next-level city data.** All cities aimed to more effectively collect, use and publish data in their first digital strategies. Now, cities are thinking about how to use this data more effectively to improve digital services – for instance by focusing on predictive analytics (Kansas City) or making open data easier to use (Vancouver). This priority is often closely associated with internal capacity-building, and investment in data infrastructure (see “*digital infrastructure investment*” below).
- b) **Data privacy and security.** Relatedly, there is a widespread recognition that privacy policies need to be clarified and enhanced. Most cities have done significant work on developing data privacy policies *before* using smart city technologies to collect significant new data (Kansas City) or are planning to strengthen privacy and data security requirements for vendors (the City of West Hollywood).
- c) **Digital infrastructure investment.** All cities are thinking about how to put in place long-term, citywide digital infrastructure – but their readiness to do so, and their time horizons, are mixed. Their ability to find financing, and whether or not they have already completed significant proof-of-concept work, appear to be the determining factors. For instance, Kansas City has already deployed smart city technologies in a significant zone downtown. It is now looking at expanding this over the next 10+ years, through innovative long-term partnerships with vendors.
- d) **Digital inclusion, redefined.** Digital inclusion is top-of-mind, but most interviewees think this should be about more than connecting every residence to broadband. Cities are also thinking through how to ensure everyone can take advantage of better connectivity, by improving digital literacy and device ownership. Some interviewees are also focusing on building trust between city government and citizens on digital. They want to ensure different socioeconomic groups *feel* comfortable using government services online, regardless of digital literacy.
- e) **Tech sector economic development (for large cities).** Most cities see economic development of the tech sector as peripheral to their primary goals of improving public services, digital equity and collaboration. New York City and Toronto are the main exceptions to this trend, where economic development is a more prominent priority.

Case Studies

This section comprises seven short case studies of the surveyed cities' strategic planning processes, priorities, and learnings that may be relevant for London as the next Smart London plan is developed. The case studies are based on interviews (typically with current or former city employees in technology and innovation departments), on cities' published strategic plans, policies and consultation documents, and on media reports. Links are provided where relevant as part of the case study.

Many of the "Additional Learnings for London" listed at the end of each case study are general pieces of advice that came directly from interviewees; others are facets of the city's activities and approach that stood out to the author of this paper. None are intended to reflect on London's existing smart city capabilities or approach.

Case studies are presented in order of the publication date of their latest strategic plan, starting with the most recent:

- The City of West Hollywood (2018) – *page 7*
- Kansas City, Missouri (2015; Digital Equity Strategic Plan in 2017) – *page 9*
- Montréal (2015) – *page 11*
- Vancouver (2013) – *page 13*
- New York (2013) – *page 14*
- Boston (n/a) – *page 15*
- Toronto (n/a) – *page 17*

The City of West Hollywood

Strategic planning process

Report Trends: (1) Iteration & flexibility + (2) Smart phasing + (3) Citizen engagement

The City of West Hollywood launched the [WeHo Smart City Strategic Plan](#) in February 2018. It builds on the city's [Innovations Annual Report](#) first published five years ago. The latest plan was inspired by the many different smart city projects happening in other municipalities. City leaders determined the city would benefit from exploring similar initiatives, and from central coordination (by the Innovation Team) rather than different departments trialling technologies on an ad-hoc basis. The city's Innovation Manager, Francisco Contreras, comments that leaders believed a master plan could "take [this thinking] to the next level". The strategic planning exercise, led by the Innovation Team, benefitted from strong support from the City Manager, Paul Arevalo. Arevalo is a long-time City employee who saw the opportunity to prepare the city for new technologies as an important part of his legacy.

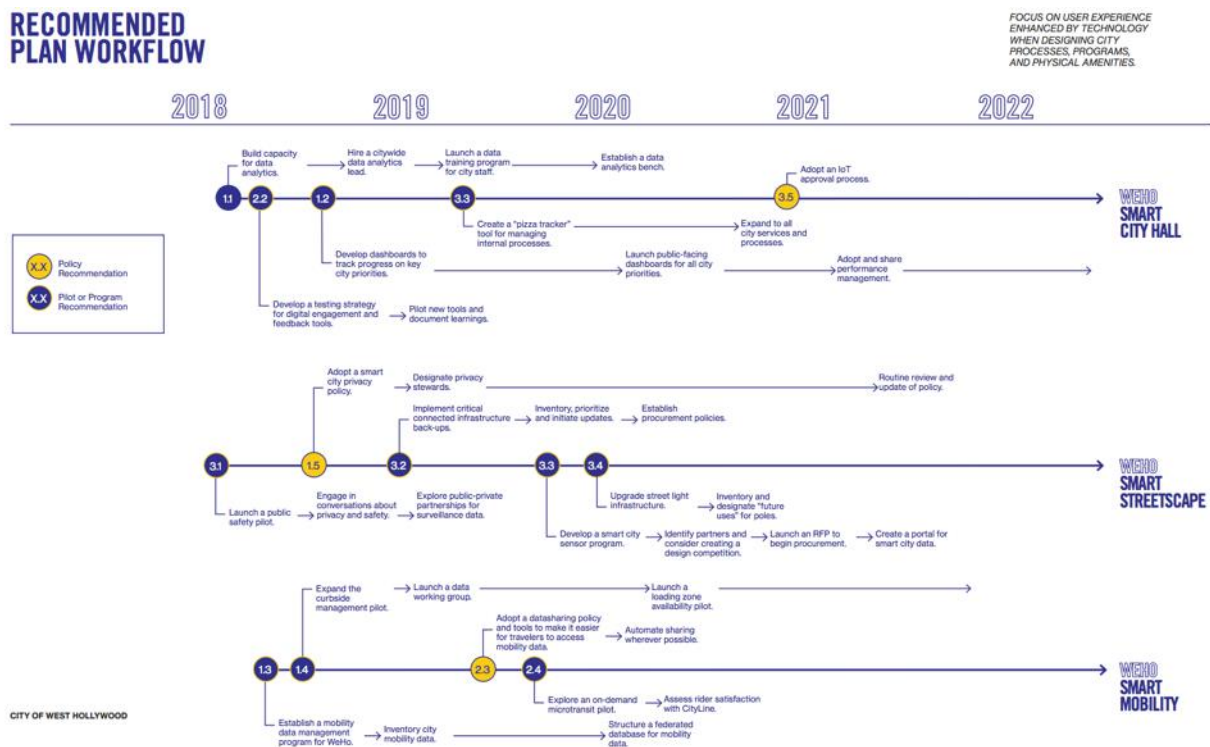
The City decided to start with a smart city branding exercise using an outside independent consultant, before developing the plan. This was intended to help the City's departments "think through how we will deliver the [smart city] messages to our constituents", and was an opportunity to increase internal momentum and collaboration. The Innovation Team (Contreras and Innovation Analyst Kate Mayerson) believe this effort was critical in setting the vision for the project effectively and ensuring it was "people-first, not technology-first". During the planning process, they also decided that the strategy would be a living document: "We will iterate every year and see what works and what doesn't. We want to stay as nimble as possible".

Priorities:

Report Themes: (a) Focus on data + (b) Privacy & security + (c) Long-term digital infrastructure

WeHo’s plan has three foundational strategies: (1) “Create a culture of data as a smart city hall ready for the future”; (2) “Collaborate and experiment across departments to do more with less”; (3) “Automate processes for an exceptional customer experience”. The plan outlines specific goals for each strategy, and implementation actions beneath each. All initiatives are aligned to the city’s five core values (developed during the branding exercise): Sustainability, Mobility, Accessibility, Resiliency and Transparency.

The city’s strategic plan is especially noteworthy for its roadmap, which integrates program, pilot and policy initiatives, and organises them sequentially. The Innovation team commented that “it really came from thinking about how we layer capacity for data, willingness for collaboration, and the ability to work cross-departmentally”. The roadmap prioritises capacity building initiatives – such as skills training among City Hall staff – then moves on to developing some core data infrastructure, and then to pilot projects. The city plans to learn from these pilots before developing more detailed implementation schedules for rolling out smart city technologies.



Roadmap in WeHo Smart City Strategic Plan (Feb 2018)

Additional Learnings for London:

- **Start the strategic planning process with “in-reach”.** Engaging internal City stakeholders early, and ensuring they remained fully engaged in and accountable for the plan, is critical.
- **Avoid an overly rigid plan.** You can still create a valuable roadmap without knowing exactly what you will implement when. Prioritise capacity-building and pilot projects at the start.
- **Focus on safety – including with vendors.** The City wants to improve data privacy and security and is modelling its approach on [New York City’s Internet of Things guidelines](#). The Innovation

Team is working closely with the city's procurement lead to reflect this in the procurement process. For instance, vendors applying to RFPs and RFQs will in future need to provide a "project privacy statement", and answer ten specific questions on their use of cloud storage and data privacy policies.

Kansas City, MO

Strategic planning process:

Report Trends: (1) Iteration & flexibility + (2) Smart phasing + (3) Citizen engagement + (4) Tech sector Collaboration

Kansas City, Missouri is well-known for its deployment of smart city technologies, enabled by substantial investments by the private sector (including Google Fibre) in the city's digital infrastructure since 2011. From 2015, the City demarcated a "smart city zone" which includes public Wi-Fi and interactive kiosks, and sensors in smart streetlights to monitor pedestrian and vehicle traffic. To plan this development, Kansas City launched its [KC Digital Roadmap](#) in 2015. It is in the process of developing a follow-up "version 2.0", to be launched in autumn 2018. Periodic "urban momentum" events for the public are helping to inform the next roadmap. The city is also purposeful about cultivating engagement with local technology companies through regular meetings.

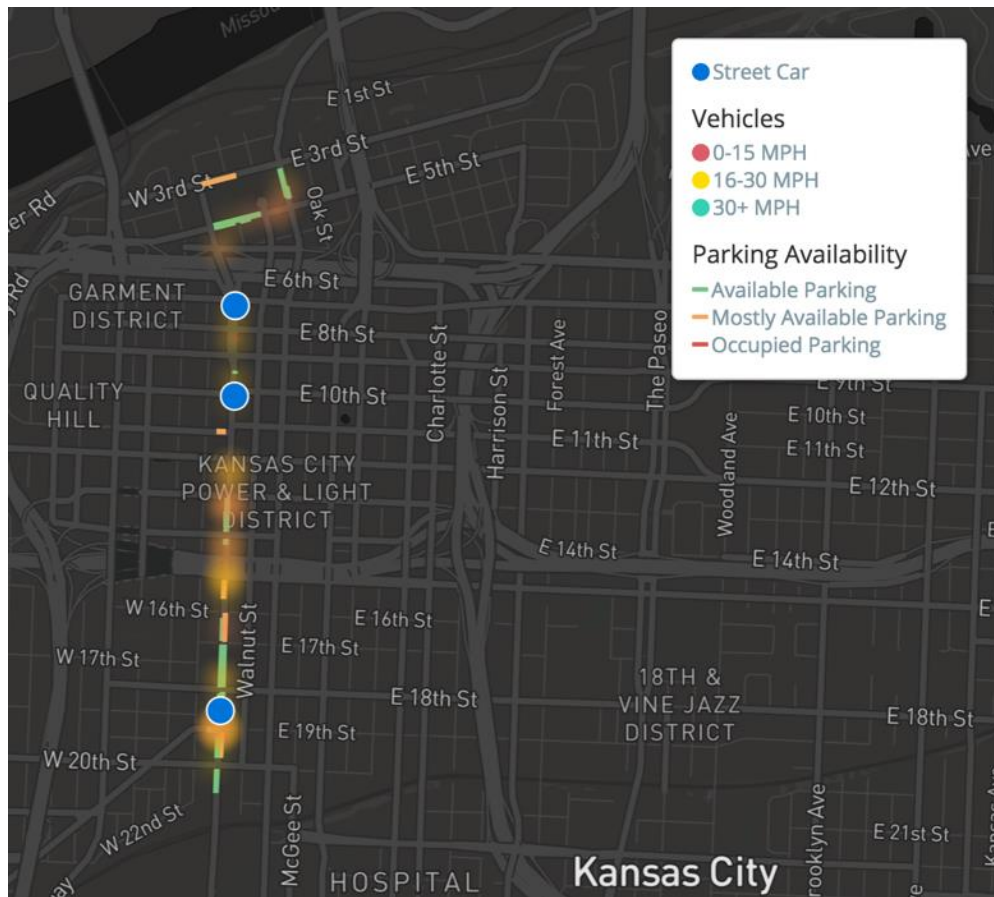
Private sector investment in infrastructure, and the City's open approach have been useful in generating significant public-private partnerships. In the course of the first Digital Roadmap, the city had 14 partnerships; its Chief Innovation Officer, Bob Bennett, predicts that will rise above 30 during the implementation of its second roadmap. The City has been purposeful in pursuing long-term (10-30 year) deals and primarily uses a "data as a service" model to provide some or all of the financing. The long duration of these deals partly reflects the maturity of KC's smart city infrastructure. But it is also a function of political timeframes: Mayor Sly James and CIO Bennett will not be in office in one year's time. Bennett calls this an "incredible motivator" for focusing on long-term planning now, to secure the city's long-term future as a leading smart city.

Priorities:

Report Themes: (a) Focus on data + (b) Privacy & security + (c) Long-term digital infrastructure + (d) Digital equity

The 2015 KC Digital Roadmap focused on five priority areas – digital inclusion, open government, engagement, industry and smart city – with three initiatives in each.

The city has leveraged data from its smart infrastructure to provide near real-time open data to its residents and businesses on traffic, public transport and digital equity. Kansas City also has more than 800 open datasets. Its internal analytics function is now focusing on using this data to develop predictive analytics, on topics from potholes to crime. This predictive analytics capability is likely to gain greater prominence in version 2.0 of the smart city roadmap.



In the Kansas City smart city zone, residents can see real-time traffic speed, parking availability, and the location of street cars. Source: [KC dashboards](#)

Kansas City also has a robust, holistic focus on digital equity, reflected by the comprehensive Digital Equity Strategic Plan the City published in 2017. This plan sets out six policy priorities to advance digital inclusion: (1) enabling access to affordable broadband, devices and digital literacy; (2) ensuring students can access online resources; (3) digital opportunities for civic responsibility; (4) harnessing the internet for job-seeking and employment; (5) ensuring entrepreneurs have high-quality internet access to create jobs and grow their businesses; (6) collaborating with national, regional and local government and with non-government organisations on digital equity. Each priority has a set of “quick-win projects” associated with it.

As CIO Bennett commented, “connectivity is not just a physical thing. It’s [also about] mindset and education”. Sequencing has therefore been critical. Kansas City has focused on building trust first in the government’s approach to digital, and then on digital literacy and skills, funded by short-term sponsorship from the local business community. Bennett argues that this is critical for people to actually take advantage of better connectivity: currently, 97% of residences have a broadband connection, but not all actually use it. This digital equity focus is continuing in version 2.0 – the expansion of the smart region is very intentionally incorporating one of the most deprived communities in the city. Bennett hopes that by “physically changing that space” – which includes installing public Wi-Fi, interactive kiosks and sensors while a new rapid transit line is constructed – the city’s least privileged residents will benefit.

Additional Learnings for London:

- **Sequence initiatives to improve digital equity.** It's necessary to first understand different communities' attitudes towards government and digital services. Then focus on building trust and improving digital literacy, not just improving connectivity.
- **Take a collaborative, cross-sector approach.** For instance, the KC Digital Inclusion Coalition includes companies such as Google, Sprint, Verizon, public libraries, employment agencies and non-profits.
- **Develop privacy policies early.** Given the extensive smart infrastructure being planned, Kansas City developed a privacy policy six months before they turned on any sensors. This policy requires the CIO to articulate to the City Council what data will be collected and why; promise to anonymise and aggregate citizen data; and to pursue an open data approach, sharing data analysis publically so that everyone can benefit.

Montréal

Strategic planning process:

Report Trends: (1) Iteration & flexibility + (3) Citizen engagement + (4) Tech sector collaboration + (5) Competitions as a catalyst

The [Montréal Smart and Digital City Action Plan](#) covered 2015-2017 and included 70 initiatives. It was prepared by the [Smart and Digital City Office](#), which also coordinated its implementation. The office is now working on the city's bid for the Canadian Smart Cities Challenge. It is pausing the development of a second strategic planning process, for two reasons. First, responding to the competition consumes considerable bandwidth; and second, the results of the competition will shape the city's future strategy.

Montréal is especially noteworthy for its highly interactive approach to collaboration. This includes [co-creation days](#) oriented towards the tech sector, civil society and academics. The Smart and Digital City Office's Acting Director, Stéphane Guidoin, described these events as "really powerful [for] coming up with a good theoretical framework". For its 2014 strategic planning process, the city organised [open meetings for citizens in libraries](#) and an [online "idea box"](#) that enabled residents to submit ideas at any time throughout the process. The team also [analysed the city's 311 calls](#) to identify when, what and where citizens were encountering issues that technology could help with (311 is a hotline that allows residents to report non-emergency issues, such as graffiti, broken traffic signals and potholes). As part of the 2014 consultation, 232 ideas were identified, which were then worked up into potential projects in the first quarter of 2015, and finally whittled down to 70 in April and May 2015. Selection criteria included: the impact on enabling infrastructure; the contribution to strategic objectives; impact on citizens; the cost/effort return on investment; and time needed for implementation.

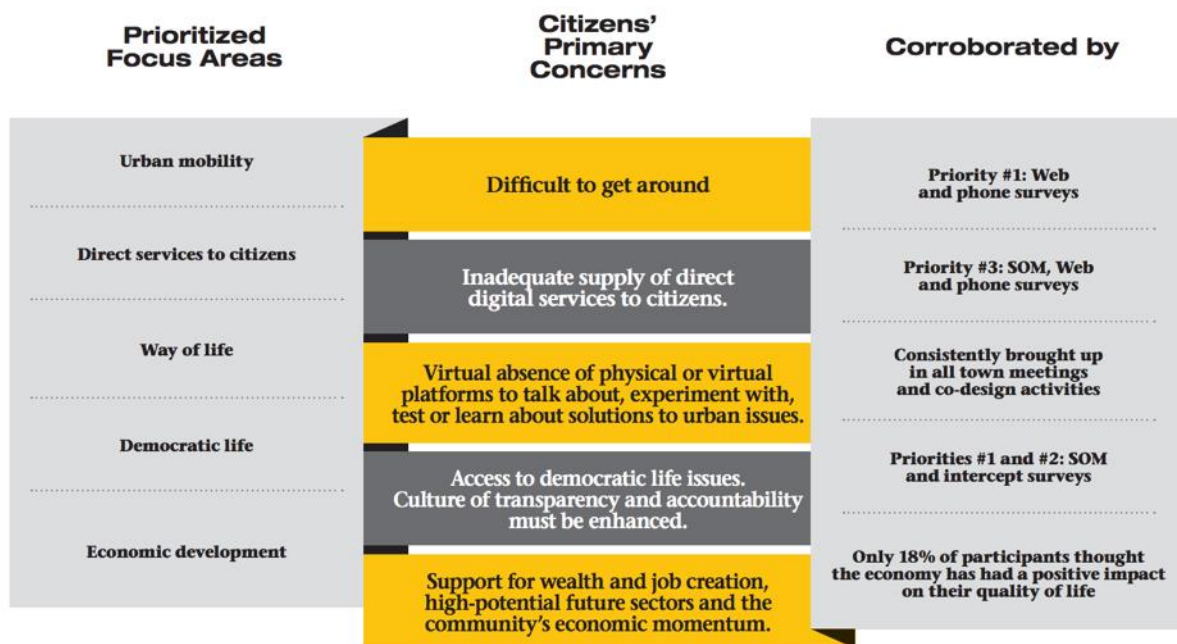


FIGURE 7: KEY CONCERNS OF CITIZENS

How the priorities in Montréal's Smart and Digital City Strategy were rooted in citizens' input. Source: [Montréal Smart and Digital City Strategy](#)

Priorities:

Report Themes: (c) Long-term digital infrastructure + (e) Economic development

The 2015-17 Action Plan had five focus areas: economic development, urban mobility, direct services to citizens, way of life and democratic life. These were supported by four structural enablers: telecoms, open data, data architecture, and community co-creation. There was a significant focus in the strategy on mobility and transportation, primarily because this emerged as a priority for the city during the consultation process. Beyond this, the team focused on smart city issues that were not already covered by an existing city department – such as connectivity, data protection policies, and citizen engagement. This approach could sometimes seem overly siloed but concentrated the resources of the Smart City and Digital Office on the gaps. Of the 70 initiatives listed in the plan, 37% were short-term (taking under twelve months) to implement; just over half (54%) fell in a 1-3 year timeframe; and 9% were projected to take more than 3 years.

Additional Learnings for London:

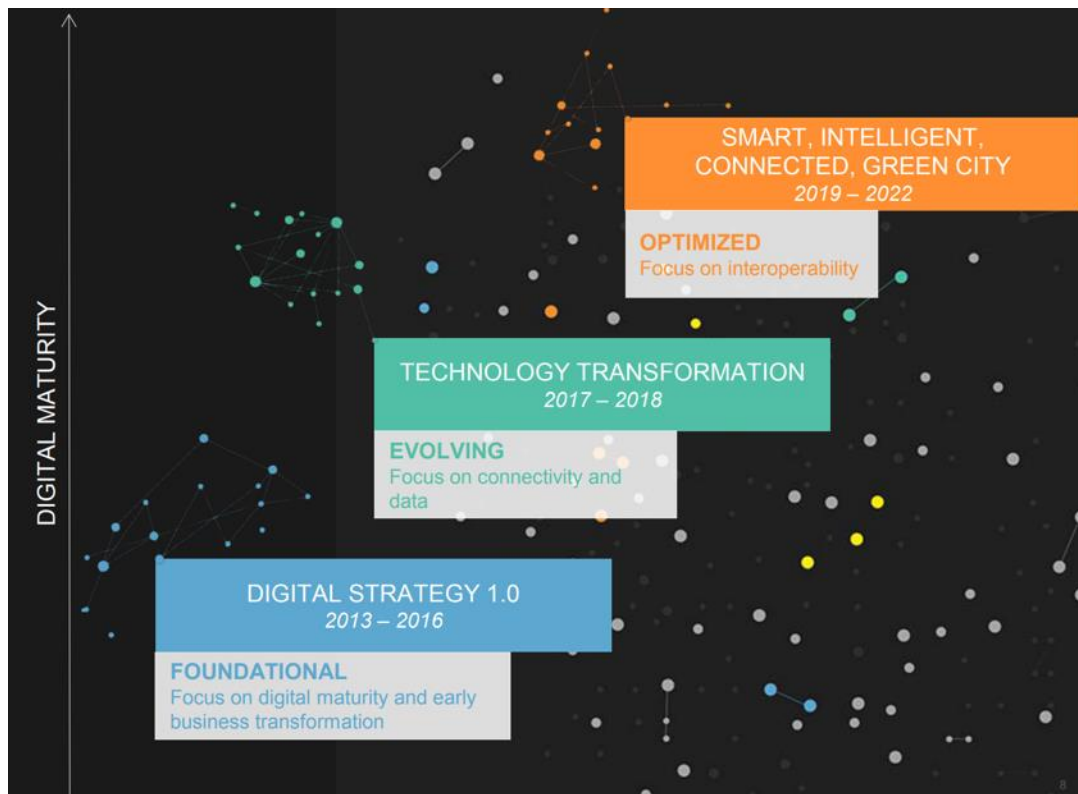
- **Try new and creative ways to engage with citizens.** Montréal has experimented with a variety of approaches. Guidoin's hypothesis is that focusing on the problems citizens want to see solved – rather than getting views on the technologies – may be most effective.
- **Prioritise relentlessly, and for your plan's timeframe.** The first Montréal Smart City Plan aimed to execute 70 initiatives in 3 years. Although ambitious, the timeframe proved much too short.
- **Maintain flexibility in how you deliver a smart city plan.** Once an initiative has been included in a strategy document, it can be difficult for the team in charge to deprioritise it, even if later down the line it becomes less relevant. Additionally, make sure the smart city / technology team in charge has the resources to continue to explore and pursue new opportunities as they arise.

Vancouver

Strategic planning process:

Report Trends: (2) Smart phasing + (3) Citizen engagement + (4) Tech sector collaboration + (5) Competitions as a catalyst

The city of Vancouver published its [first digital strategy](#) in 2013, which had a three-year time horizon (to 2016). This strategic planning effort was intended to be an extension of the city's early pioneering work on open data, which began in 2009. The city undertook an extensive consultation process, including interviews, validation sessions and collaborative design workshops. This generated 120 ideas, which were eventually whittled down to 15 initiatives, and 9 were prioritised. Alignment with citizens' needs, the city's operational priorities, partnership potential and support of existing open government initiatives were among the criteria used for this prioritisation.



Vancouver's view of its journey towards becoming a smart city

Source: [Smart City – The City of Vancouver Digital Journey](#), Jessie Adcock, December 2017

Vancouver is currently graduating from this first “foundational” strategy to becoming a [“smart, intelligent, connected green city”](#) in 2019-2022. To get there, the city's CIO Jessie Adcock has designated 2017 and 2018 as “evolving”, transitional years. During these years, the city has planned on an annual basis but will develop a longer-term strategic plan for 2019 onwards. This timing is partly designed to align with the city's three-year capital planning cycle: the new cycle starts in 2019. In the interim, Vancouver is participating in the Canadian Smart Cities Challenge.

Priorities:

Report Themes: (a) Focus on data + (c) Long-term digital infrastructure + (e) Economic development

The 2013-16 strategy was organised around four pillars: engagement & access, infrastructure & assets, economy (all outward-facing) and organisational digital maturity (internally-focused). These pillars were defined both by identifying the city's goal, and by researching the digital strategies of New York, Chicago and other leading cities. These pillars continue to organise Vancouver's smart city thinking today. Vancouver also has a particular emphasis on improving the resilience of its digital infrastructure, due to its high earthquake risk.

Since the completion of the 2013-16 strategy, Vancouver has concentrated in particular on using data analytics to improve city services, and on enhancing tech skills among city employees. Senior Digital Services Manager Tadhg Healy notes that its data focus has been driven partly by the City Manager, who wanted real-time reporting of residents' concerns. There has also been a focus on enhancing governance, by providing more information and training to digital decision-makers. In Vancouver, a technology governance group of senior city officials decide which discretionary tech projects get resourced.

Additional Learnings for London:

- **Keep industry advisors engaged throughout delivery, not only during strategy development.** Vancouver was successful in collaborating with the tech sector during the planning of its 2013-16 strategy but did not continue this during the implementation phase. This could be a lost opportunity, partly because ongoing external engagement would have made it easier to keep up-to-date with the latest tech developments.
- **Lower the barriers to engaging with the local tech sector.** For instance, Vancouver has added a simple [“call for innovation” form](#) for businesses to submit ideas as part of its [response](#) with the City of Surrey to the Canadian Smart Cities Challenge.
- **Be careful about how you include actions in a strategic plan that are outside the digital team's control.** Including initiatives in the plan in advance that fall under the purview of other departments or agencies without explicit agreements in advance, risks resulting in inaction.

New York City

Strategic planning process:

Report Trends: (1) Iteration & flexibility + (3) Citizen engagement + (4) Tech sector collaboration + (6) No digital masterplan

New York City's first digital strategic plans – its roadmaps – were developed in 2010-2013. However, the City has moved away from developing city-wide digital master plans. This is for three main reasons. First, the office does not currently have the resources to spare for a time-intensive strategic planning effort. Second, there is a concern that comprehensive digital plans can quickly become outdated. As Deputy CTO Jeremy Goldberg commented: “Technology is developing so rapidly that if you spend too much time on strategic planning you [risk] designing a plan that may not be relevant in a year”. Third, the Mayor's Office of the CTO can use the city's overall strategic plan – [One New York \(2015\)](#) – to prioritise its work. Indeed, digital technologies are integral to the *One New York* plan: the words “technology” and “digital” appear a total of 101 times throughout the document.

New York City does also have a [Digital Playbook](#): a series of principles (such as “Make government simple”) and strategies (such as “Structure services around New Yorkers' needs rather than by agency needs”). NYCx (see below) includes [Co-Labs](#) to help the city design technology solutions with

communities and to help nurture tech talent. The Mayor's Office of the CTO and the [NYC Department of Information Technology & Telecommunications](#) have also invested time in streamlining procurement for digital design services (see [Government x Design](#)), and developing policy (see the [Guidelines for the Internet of Things](#)). These initiatives help enable digital work across city agencies and departments and make it easier for them to develop and execute their individual digital work plans.

Priorities:

Report Themes: (a) Focus on data + (b) Privacy & security + (c) Long-term digital infrastructure + (d) Digital inclusion + (e) Economic development

NYC's Office of the CTO is divided into four teams, which largely reflect its priorities. NYC Digital focuses on helping agencies create citizen-centred digital services; NYC Forward helps the City use smart city technologies safely and securely; and NYC Connected focuses on digital equity and access to broadband. Additionally, NYCx – established in 2017 – aims to [“make NYC the place to launch tech for the public”](#), and to provide a way for early-stage startups and the public to help test new ideas through a series of challenges.

Compared with other cities, NYC has a particular focus on industry engagement and tech talent – very relevant priorities for London. Goldberg notes that one of NYCx's purposes is to be “the front door for emerging and breakthrough technologists, entrepreneurs, and industry to partner with the city”. Technology firms, whatever their size, can get advice from NYCx, participate in a mentoring program, or contribute to the City's digital inclusion agenda. Equally, if a city department is looking for prospective vendors, or want a sense of the latest tech developments in a certain space, it can get in touch with NYCx to do the outreach on its behalf. NYCx also has a Technology Leadership Advisory Council – [launched by Mayor De Blasio](#) – to strengthen ties between the City and industry to enhance economic development, the City's use of technology, and policy.

Additional Learnings for London:

- **Partner with other cities to enhance learning and collaboration.** For instance, NYC is currently [partnering with Paris](#) on a challenge to accelerate the transition to electric vehicles.
- **Retain flexibility, especially when it comes to emerging technologies.** As Goldberg comments: “It's important, in the context of emerging and breakthrough tech partnerships, to remain open to opportunities that haven't been prescribed. It's important to leave room for ideas that have not been considered before”.
- **A gateway like NYCx is not only a vehicle for tech and civic co-creation, it can also help to streamline the procurement process.** NYCx can be a go-between when working with companies whose technology might be suitable for city procurement – potentially truncating a lengthy procurement process.

Boston

Strategic planning process:

Report Trends: (1) Iteration & flexibility + (3) Citizen engagement + (4) Tech sector collaboration + (6) No digital masterplan

Boston does not have a technology-specific strategic plan. The Department for Innovation and Technology (DoIT) has helped to incorporate technology into two city-wide strategies: [Imagine Boston 2030](#) (a holistic vision for the entire city) and the transport-focused [Go Boston 2030](#). Jascha Franklin-

Hodge, former Boston Chief Information Officer, commented that he “saw technology as a supportive element”. DoIT identifies and prioritises digital projects in three main ways. First, it focuses on helping departments that are committed to change, including at senior leadership level. Second, it seeks out projects that it could feasibly execute. As Franklin-Hodge noted, “we asked ourselves, what does the city want to change? And where can we marshal political and financial support?”. Third (but more rarely) the team looks to what other cities are doing and proactively proposes technology solutions where there is a strong rationale. One example was smart streetlights, which promised to both improve lighting for residents and generate revenue for the city.

One hypothesis for why the City of Boston has been able to pursue a highly experimental, nimble approach to technology may be thanks to the support of the Mayor’s Office for New Urban Mechanics (MONUM). Founded ten years ago, the office is an R&D function for the city. One example was a collaboration with DoIT to test a set of video cameras, sensors and LED lights around a [busy street intersection](#), with the aim of improving traffic safety. The city evaluated efficacy, but also put up posters in plain language around the intersection about the data collected, and asked residents and local civil rights organisations for feedback.

MONUM uses three main criteria to determine its project portfolio: feasibility, impact and risk. By balancing high-risk, high-reward projects with lower-risk projects almost certain to have a positive impact, MONUM ensures a steady stream of success to maintain goodwill. But above all, projects must “focus on real challenges that residents have”, according to its Co-Chair, Kris Carter. Indeed, DoIT’s four guiding principles – which resulted from the intensive user research and testing it undertook for its new website, Boston.gov – guide all the city’s digital work.

OUR GUIDING PRINCIPLES

In building Boston.gov, we spoke to City Hall workers, residents, and outsiders to find out what they would want from City government. Those conversations helped create the four strategic principles that guide the work we do:

ACT AS A HELPFUL HUMAN

What would a helpful human do? We want to empathize and react based on context, knowing when to guide and make suggestions and when to just direct and step aside.

EQUAL PARTS WARM AND OFFICIAL

We’re trying to create a place that feels approachable with a clear guide for finding information, getting something done, and taking action. This tone needs to balance professional with friendly, official with open.

HELP PEOPLE NAVIGATE THEIR PORTION OF THE SYSTEM

We need to organize our work through the user’s perspective. We don’t want residents to hunt and gather everything.

BUILD AN ENERGIZING ENVIRONMENT

We hope to inspire our constituents, whether they’re completing a transaction, learning something new, or just looking to get more engaged with government.

The City of Boston Digital Team’s Guiding Principles

Source: [Boston Digital Team website](#)

Priorities

Report Themes: (a) Focus on data + (b) Privacy & security + (c) Core infrastructure + (d) Digital inclusion

The City of Boston's Department of Innovation and Technology (DoIT) lists five main focus areas listed on its website: (1) maintaining and improving the city's core infrastructure, (2) enterprise applications for the city government, (3) digital engagement and services, (4) data and analytics and (5) broadband, cable and digital equity. DoIT develops its work plan on an extremely short-term basis, to stay agile. The digital team's product roadmap is updated every quarter.

Boston is expanding its work on digital equity, and in [2017 started a fund](#) to support civil society projects that advance this priority. However, Franklin-Hodge argues that digital equity should not just be about expanding internet access, but also consider how people actually interact with technology – especially from the government. This likely includes conducting design research to understand which socioeconomic groups might not use a particular service digitally, perhaps because they do not trust how the government is collecting and using their data – not because they cannot access the internet. It also means ensuring that every digital service works just as well on a mobile device as a desktop (especially educational applications) so that those without home broadband connections are not disadvantaged.

Additional Learnings for London:

- **Invest in the City's website.** An attractive “digital front door” – in the form of [Boston.gov](#) – has helped ordinary residents and businesses to engage with the City.
- **Near-term work plans can help.** [Planning work on a short-term basis](#) – and being transparent about priorities – maintains flexibility, openness, and can help manage expectations.
- **Provide guidance for vendors to make industry engagement more productive.** The [Boston Smart City Playbook](#) provides transparency about the city's view of smart city technologies and gives practical advice to prospective vendors.

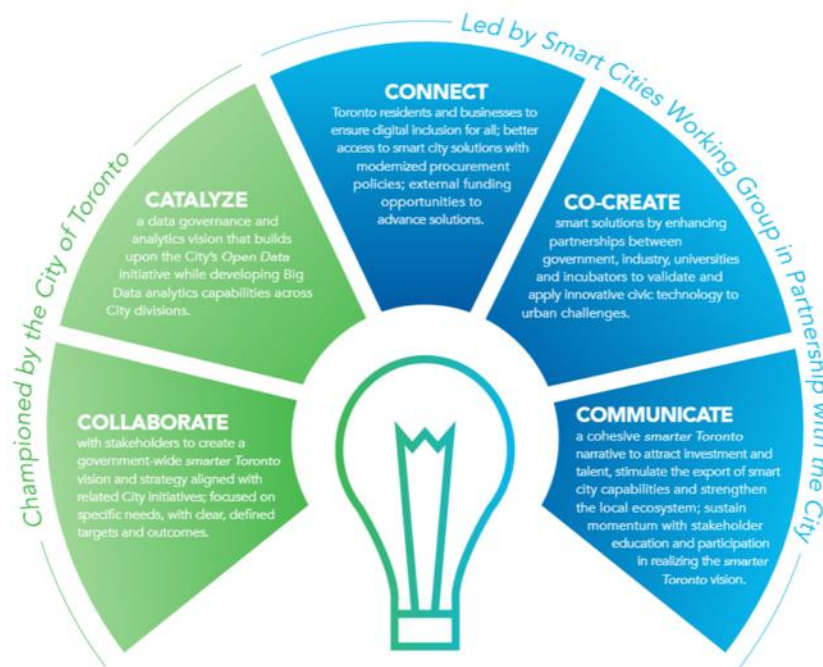
Toronto

Strategic planning process:

Report Trends: (1) Iteration & flexibility + (3) Citizen engagement + (4) Tech sector collaboration + (5) Competitions as catalyst

Toronto does not currently have a single municipality-wide smart city strategic planning process underway. However, it has [outlined an approach](#) to its Smarter Cities Initiatives, and planning for two major projects is underway. The first is the City's submission to the Canadian Smart Cities Challenge. The second is the Sidewalk Toronto partnership (between the City and Alphabet subsidiary Sidewalk Labs). Many divisions (boroughs) within the City have also been undertaking their own smart city projects. There is continuing discussion about whether or not the Sidewalk Toronto project (currently focused on the Waterfront area), should be a stand-alone project or more connected with the rest of Toronto.

In an effort to increase coordination, the City has recently hired its first Chief Transformation Officer, who will work horizontally across city departments. Toronto's Board of Trade is convening a Smart City Working Group in partnership with the City's Economic Division. Its primary purpose is to build a supportive ecosystem around smart city technologies. Although the group is initially focused on supporting Toronto's Smart Cities Challenge bid, if the City decides to undertake a holistic smart city strategic planning process, forums like this will be able to support it.



The City of Toronto's collaborative approach to building the local smart ecosystem

Source: *Smart Cities Initiative, Executive Committee presentation* (Mike Williams, General Manager, Economic Development & Culture and Rob Meikle, Chief Information Officer, October 2017)

Priorities:

Report Themes: (c) Long-term digital infrastructure + (d) Digital inclusion + (e) Economic development

Both Sidewalk Toronto and Toronto's bid for the Canadian Smart Cities Challenge have focused on social inclusion and bridging the digital divide. This is for two main reasons. First, Toronto is a particularly diverse city: over 50% of residents are foreign-born, and the city is proud of its inclusive culture and outlook. Second, there is a concern that smart cities are sometimes still seen as elitist; to succeed, they need to develop appeal and relevance to a broad array of socioeconomic groups.

Beyond this, Toronto has focused on using smart cities as a tool for economic development, and as an opportunity for cross-sectoral and inter-organisational collaboration. The city's smart city procurement potential (Toronto has a 2018 city budget of CAD 11bn or around £6bn) is recognised as a powerful draw for technology companies, and a reason to build a culture of collaboration. Finally, there is increasingly also a focus on working towards common partnership, privacy and security standards.

Additional Learnings for London:

- **Building the "ecosystem" around smart cities is critical, both for economic growth and as a foundation for productive public-private collaboration.** This includes engaging with major technology and infrastructure companies, corporates in other verticals, and small businesses. Universities and incubators are also vital components.
- **Take care that smart cities initiatives aren't perceived as elitist or for top earners.** Focus on identifying and realising concrete benefits for low-income and less privileged groups.

Conclusion

This report has presented a snapshot of the state of smart city and digital strategic planning across seven cities in North America. These cities are not necessarily representative of the whole region, nor always comparable in structure or size to London. However, the case studies outlined here illustrate a range of different approaches to planning and prioritisation. They also offer a number of learnings for the Smart London Board, as it drafts the new Smart London Plan. First, thoughtful phasing – and reserving some capacity to innovate – can help mitigate some of the risks and uncertainties of digital master planning. Second, meaningful engagement with citizens, industry and city agencies may require trialling multiple participatory methods. Collaboration should become a mindset, not just part of the planning process. Third, smart master plans may not always be necessary, as digital planning and delivery becomes more strongly embedded across the GLA family and boroughs. But to get there, London likely needs a strong coordination function, and dedicated resources for innovation. This is another reason to champion the proposed London Office of Technology and Innovation. Finally, the Smart London Board’s five workstreams are common across other cities. As concrete initiatives are scoped out in the new Plan, London should look to partner with cities that have similar agendas.

Acknowledgements

Many thanks to the following individuals for generously giving their time and perspectives:

- **Natasha Apollonova**, Assistant Vice President, Policy – Toronto Board of Trade
- **Bob Bennett**, Chief Innovation Officer – Kansas City
- **Kris Carter**, Co-Chair, Mayor’s Office of New Urban Mechanics – City of Boston
- **Francisco Contreras**, Innovation Manager – City of West Hollywood
- **Jascha Franklin-Hodge**, former Chief Information Officer – City of Boston
- **Jeremy Goldberg**, Deputy Chief Technology Officer, NYCx – New York City
- **Stéphane Guidoin**, Acting Director, Smart & Digital City Office – City of Montréal
- **Tadhg Healy**, Senior Manager, Digital Services – City of Vancouver
- **Kate Mayerson**, Innovation Analyst – City of West Hollywood
- **Alexandra McDonough**, Senior Planner – Canadian Urban Institute
- **Geneva Starr**, Project Coordinator – Canadian Urban Institute

Key References

The City of West Hollywood:

[WeHo Smart City Strategic Plan \(2018\)](#)

Kansas City, Missouri:

[KC Digital Roadmap \(2015\)](#)

[KC dashboards](#)

[Kansas City Digital Equity Strategic Plan \(2017\)](#)

[Kansas City data privacy principles \(2015\)](#)

Montréal:

[Montréal Smart and Digital City Action Plan \(2015\)](#)

[Montréal Smart and Digital City Strategy \(2014\) – prelude to 2015 action plan](#)

[Smart and Digital City Office site](#)

Vancouver:

[City of Vancouver Digital Strategy \(2013\)](#)

[Smart City – The City of Vancouver Digital Journey](#), Jessie Adcock, December 2017

New York:

[NYC Digital Playbook](#)

[NYC Guidelines for the Internet of Things](#)

[One NYC](#)

Boston:

[Boston Smart City Playbook](#)

[City of Boston Digital Team Roadmap](#)

[Mayor’s Office of New Urban Mechanics \(MONAM\) site](#)

[Boston Digital Equity Fund site](#)

[Go Boston 2030](#)

[Imagine Boston 2030](#)

Toronto:

[Sidewalk Labs Feedback Report, Sidewalk Toronto Community Town Hall \(2017\)](#)

[Sidewalk Labs sections of RFP Submission](#)

[Smart Cities Initiative, Executive Committee presentation](#)