



**SMART LEADERS
FOR SMART CITIES**

Summary Report

April 2018 —

WHAT DO WE MEAN WHEN WE TALK ABOUT SMART CITIES?

With over 80% of Canadians living in urban areas – a percentage that is expected to increase – our cities are facing a tremendous pace and scale of change, driven by rapid advances in ‘smart city’ technologies with limitless potential for disruption. **Our public infrastructure and essential services are increasingly powered, influenced, or controlled by technology, data, and most recently, decision-making algorithms** – something that is created by a select few, and understood by even fewer. This concept of smart cities brings to mind many questions and issues, such as...

Is ‘disruption’ necessarily a good thing, and what will they mean for our economy, culture, and social fabric?

*Will artificial intelligence and machine learning algorithms eliminate, or simply perpetuate our existing bias, prejudice, and inequality?
Who is included or excluded from the benefits of this new technology?*

What the heck are smart cities anyways, and how will we respond and rise to the opportunities and challenges it presents?

To help shed some light on this topic and contribute to the public discourse, [Artengine](#) and [Impact Hub Ottawa](#) hosted the [Future Cities Forum](#) on February 23-24, 2018, bringing together over 250 engaged citizens and the next generation of our civic leadership to explore and examine possible futures for our cities.



60

EMERGING
CIVIC LEADERS
IN THE
TECHNOLOGY,
SOCIAL IMPACT,
AND CULTURAL &
CREATIVE
SECTORS FROM
MONTRÉAL,
TORONTO,
AND OTTAWA

Ph. Christopher Snow



KEYNOTE SPEAKERS

Co-presented
with the
**National Capital
Commission**
Urbanism Lab



**Madeline
Ashby**

*Science fiction
writer and futurist*



**Ken
Greenberg**

*Urban designer
and advisor
to Google's
Sidewalk Labs*



**Tracey
Lauriault**

*Researcher and
professor of critical
media and big data*

GUEST SPEAKERS



Bianca Wylie

*Co-Founder
Tech Reset
Canada*



Erin Kelly

*CEO
Advanced
Symbolics*



Nasma Ahmed

*Open Web Fellow
Ford Foundation/Mozilla
Foundation*



**Solmaz
Shahalizadeh**

*Director of Data
Merchant Services
Algorithms at
Shopify*



**Jérôme
Maurice**

*Economic
Dev. Advisor
Smart and Digital
Office,
Ville de Montréal*



Kendra Smith

*Associate Director
Community Engagement,
Center for Population
Health Sciences, Stanford
University School of
Medicine*



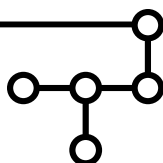
Teresa Scassa

*Canada Research
Chair in Information
Law
University of Ottawa*



Matthew Claudel

*Co-founder of designX
at the MIT School of
Architecture + Planning*





Ph. Christopher Snow

We are especially proud to have brought together a demographic who is not typically included or invited to participate in this kind of dialogue, and to have organized an event that did not follow a typical conference format. While we are certainly not the first to host a dialogue about emerging technologies such as artificial intelligence and machine learning, we realized that the conversation rarely extended to the implications of these technologies for our culture and society, something that was important to both Artengine and Impact Hub Ottawa's communities. We also observed that typical technology conferences and architecture or urban planning symposia did not always reach or attract an audience that reflected the diversity of our current (let alone future) cities. It just didn't make sense to us to talk about future cities without the sole focus and emphasis being on the next generation of civic leaders who are critical to shaping that future.



With such a diverse group of young leaders, we did not expect a common consensus on the complex topic of smart cities. But throughout the course of the Forum, we observed certain themes and narratives emerging from the questions and insights, hopes and wishes, fears and concerns, and principles and values expressed by our participants:

**1. DOES MORE DIGITAL
HAVE TO MEAN LESS
HUMAN?**

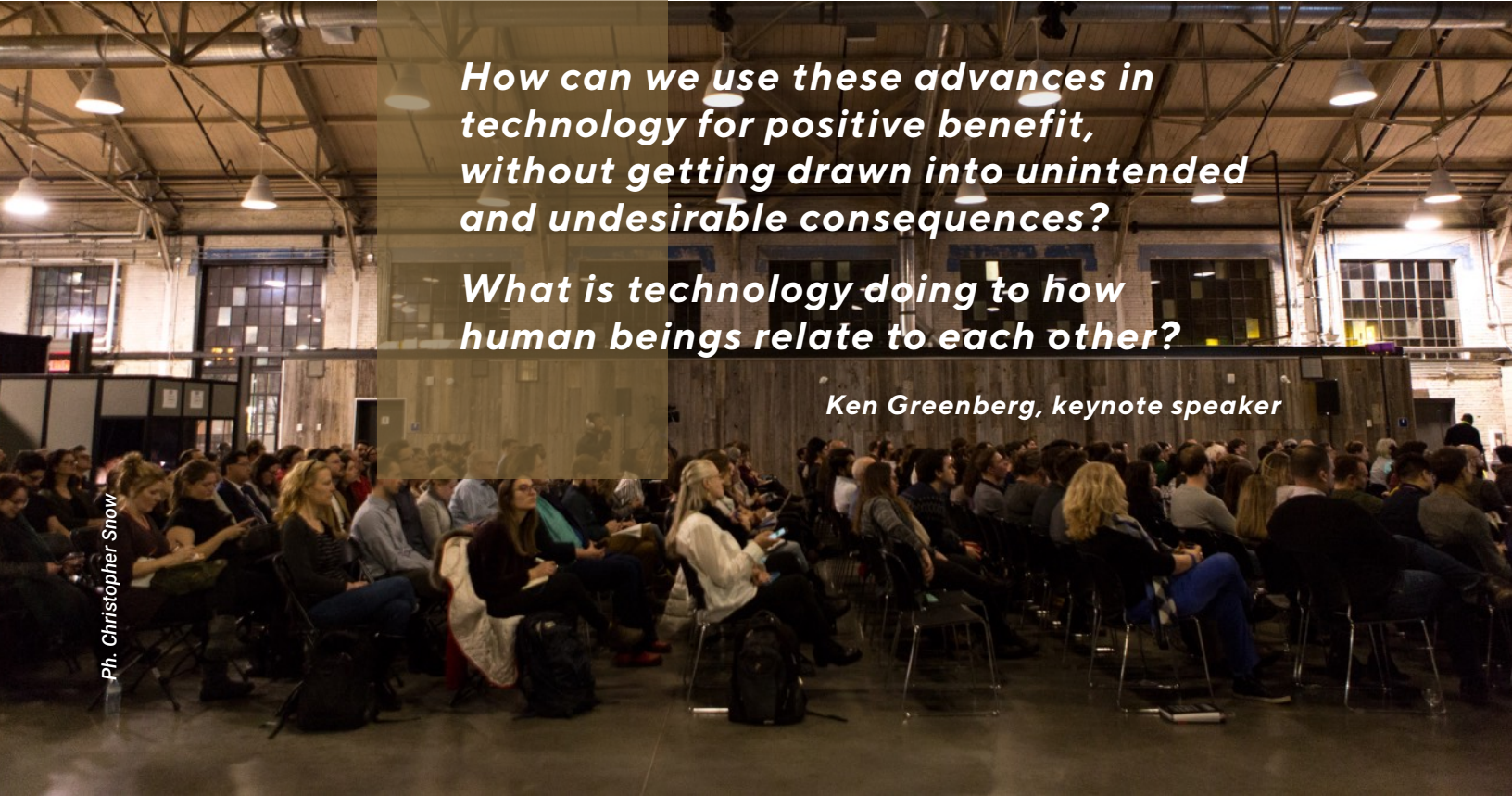
**2. WHAT HAPPENS
WHEN WE HAVE
CIVIC COMPETITION?**

**3. WHAT ARE THE
'TERMS AND CONDITIONS'
FOR MY CITY?**

**4. HOW WORRIED SHOULD
WE BE ABOUT ARTIFICIAL
INTELLIGENCE?**

**5. ARE SMART CITIES A
GOOD OR BAD THING?**

Recently, the federal government's **Smart Cities Challenge** has catalyzed conversations in cities and communities across Canada as municipal governments and citizens grapple with the fundamental question of 'what is a smart city' and 'what makes us a smart city?' – a conversation that will rightly extend beyond the timelines of the Challenge. We hope that these perspectives and insights from young leaders at the Future Cities Forum **contribute to the public discourse and help spur a more nuanced dialogue around smart cities** by providing an informed and thoughtful set of considerations for anyone – elected officials and public servants, civil society and community organizations, technology companies and regular citizens – working to better understand, co-create, and lead our future cities.



How can we use these advances in technology for positive benefit, without getting drawn into unintended and undesirable consequences?

What is technology doing to how human beings relate to each other?

Ken Greenberg, keynote speaker

Ph. Christopher Snow

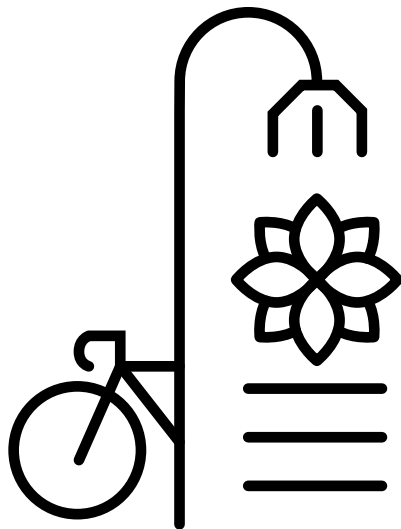
1. DOES MORE DIGITAL — HAVE TO MEAN LESS HUMAN?

It is almost cliché for older generations to reminisce about the good old days when people would actually have social interactions in public instead of being lost in the screens of their mobile devices. They may be surprised to learn that our participants – comprised largely of millennial-aged digital natives who grew up in an environment and culture of always-on and always-connected technology – identified increasing social isolation and loss of human connections as one of their most pressing concerns about our future cities.

With the seemingly unstoppable trend of businesses replacing service workers with automated machines and artificial intelligence, many expressed worry about the loss of opportunities for human connections and face-to-face interactions in our daily lives. Others cited the negative effects on our mental health and social well-being of always being connected or tethered to work, the addictive feedback loops built into the apps we have come to rely on, and the struggle to quit social media for one reason or the other without being completely losing touch with friends and family. Overall, there was a recognition from the group that the tech sector's mantra of 'technology brings people together' is not automatically or inherently true – that without intentional thought given to how it's being used, simply increasing the quantity and pervasiveness of digital technology in our race to becoming 'smart cities' could actually exacerbate existing divides between residents and neighbourhoods of different geographies, socio-economic situations, and levels of digital access and literacy.

Insight for policymakers and smart city proponents

Cities should resist the urge to make sweeping assumptions about the inherent benefits of technology, and make every effort to ensure benefits are distributed equally and equitably, starting with the groups and demographics who are most in need, and developed with mental health and well-being implications in mind. We should also not mistake the ease or even desirability of digital connection and virtual interactions as a substitute for the importance and need for shared civic and public infrastructure that provide and foster opportunities for in-person interactions. This not only includes traditional spaces like libraries and community rec centres, but newer forms of civic commons such as parklets (streetside parking converted into patios and public space); coworking and other shared cultural, recreational, or performance spaces; community food centres and gardens; street food and farmers markets; and the like.



2. WHAT HAPPENS WHEN WE HAVE CIVIC COMPETITION?



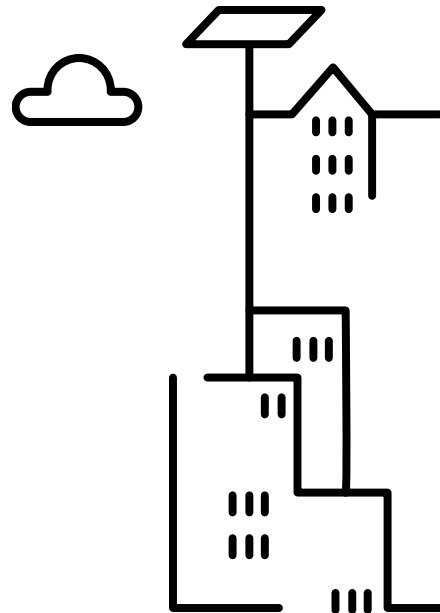
Speaking of the civic commons, our participants expressed a different set of expectations when it comes to how our systems are designed to function in the future. They are anticipating an increasing shift away from our current systems of private ownership and centralized institutions in monopolistic roles, and towards a more open, decentralized, and customizable system enabled by shared infrastructure.

Airbnb and Uber are the most-cited examples of ‘disruptive’ companies that have wreaked havoc with municipal regulatory frameworks that were codified in a pre-Internet age, and stymied public leaders ill-equipped to balance economic development with protecting the public interest. While they had their origins in the benign-sounding ‘sharing economy’, cities are now struggling to understand and regulate the effects of ridesharing and short-term accommodations on essential civic domains such as public transit and affordable housing. These two companies have inspired and spawned countless other tech upstarts that do not build or acquire physical assets in the traditional sense, but rather rely on technology to play a matchmaker role between individual citizens with similar needs and wants.

Similar to these services that the digital economy has enabled, our participants expressed a vision of our future cities that was equally **open, decentralized, and flexible, and able to deliver the same level of personal choice, customization, and control** to which we have become accustomed. The question confronting cities and communities is that more and more technology companies are offering services and experiences that increasingly encroach on areas traditionally served by municipalities or other centralized entities used to operating as a government-protected or regulated monopoly. How can our cities respond and adapt to this new environment of on-demand, real-time expectations from citizens?

Insight for policymakers and smart city proponents

It is worth noting that in certain contexts, this expectation of future cities stands in contrast to the kind of public infrastructure projects in which we are currently investing heavily – for instance, large-scale, expensive, fixed, monopolistic transportation and transit infrastructure. This is not to say that there is no place for large-scale public infrastructure in our future cities, but that given the long development timelines and lifespans of these assets, policymakers should consider how best to complement (or where appropriate, replace) them with systems that can easily adapt to changing urban and economic realities by being **cheaper and quicker to build and modify, and designed for our real-time, on-demand expectations**. For example, some municipalities without the population density to run adequate public transit are partnering with ridesharing companies to provide and subsidize on-demand transportation for residents. Whether it is transportation or other essential public domains like healthcare, education, or energy, residents will increasingly expect services – online or in-person – to reflect their personal needs and preferences, exactly when and where they need it.



3. WHAT ARE THE ‘TERMS AND CONDITIONS’ FOR MY CITY?

While all of us have clicked ‘I Accept’ when signing up for new online services without a second thought, our participants made clear that the obviously inadequate and unacceptable status quo (expecting all users to read and comprehend thousands of words of legal fine print) **should not be misconstrued as apathy or indifference** regarding data privacy and digital rights. With recent events concerning citizens’ private data being harvested, sold, and used to manipulate others without their knowledge or permission, governments exploring partnerships with smart city tech providers will need a solid answer to the question ‘who gets to do what with whose data?’

These public-private partnerships range from smaller-scale pilot programs such as Kingston, Ontario working with Bell Canada to monitor data for maintenance and energy efficiency and provide public Wi-Fi kiosks, to examples such as Waterfront Toronto working with Sidewalk Labs (a sister company of Google) at the scale of building an entire new neighbourhood. The latter has catalyzed an outpouring of civic engagement and activism, raising questions about what data Sidewalk Labs is allowed to collect, when and from whom, and how they plan to monetize it – questions which Waterfront Toronto has not been able to answer definitively thus far.

Other municipal leaders should expect a similar level of interest and concern from citizens regarding issues around data governance, ownership, and privacy – even (or perhaps, especially) from the technology community. Our participants made it clear that even this demographic of digital natives and tech-savvy citizens are not yet adequately reassured **how tensions between public and private interests will be managed and resolved** when cities venture into uncharted, smart city territory.



Insight for policymakers and smart city proponents

The need for stronger legal and policy frameworks around data (both public and private) is quite clear, but our participants noted that they also have to be policy innovations in and of themselves in order to break out of bureaucratic or departmental silos, and address issues that range from data sovereignty and human rights, protecting children and youth from data mining and profiling, and regulating fairness, accountability, and transparency in AI algorithms. As we've seen with the exponential growth of Uber and Airbnb in the face of inadequate, outdated, or non-existent policy and laws, new technologies and the ambitious companies behind them are out-pacing and out-maneuvering the tools we have at our disposal to protect the public interest.

In the context of smart cities with increasingly blurry lines between public and private interests, our participants expressed a need for citizens to be able to 'opt-in' and 'opt-out' of specific instances and contexts instead of being forced to give consent to an all-encompassing agreement at one point in time – a sentiment that aligns with the observation mentioned above of individuals placing a high value on choice, control, and customization. A smart city should make **opting out and revoking consent as simple and straightforward as giving it.**

4. HOW WORRIED SHOULD WE BE ABOUT ARTIFICIAL INTELLIGENCE?

Ask anyone about what worries them about the impact of increasing artificial intelligence in our lives, and you're likely to receive a half-joking response that involves self-aware robots rising up against their human makers. What we heard from our participants is that the fears are real – but it's less about Skynet orchestrating a world-ending apocalypse, and more about the negligent or malicious human actions that seek to exploit the system. We are already witnessing incidents that lead to the **erosion of trust, accountability, transparency, oversight, and ultimately control of algorithms and their effect on society** – for example, threats to our democratic processes, public institutions, and social fabric from hacking and fake news.

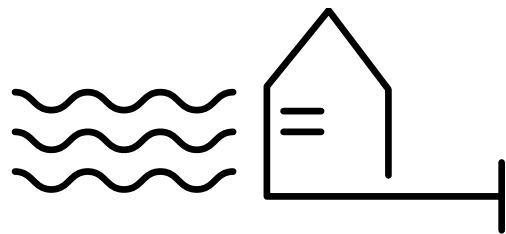
The issue underpinning these concerns is a widespread lack of digital literacy – a term that is currently only associated with things like teaching kids how to code or use 3D printers. Our participants identified digital literacy as a necessary and foundational part of a smart city – in the same way that an informed citizenry is necessary for a functioning democracy, **a digitally literate citizenry is necessary if we are to expect transparency and accountability** from the myriad public and private entities that collect, store, analyze, sell, archive, and use our personal data. This issue was identified by our participants before the incident involving Facebook and Cambridge Analytica became known, which revealed the greater danger of these violations of privacy happening steadily in the background without the attention of a singular scandal.

Digital illiteracy is not just the inability to use or understand technology – it's also the instinctive belief that technology can solve all of our problems, no matter how complex or how deep-rooted they may be in social and systemic issues that have entrenched themselves over generations.

There is a tendency for tech-solutionists to optimize or ‘solve for’ superficial problems instead of taking the time to understand and address the root causes. And the rest of us are often blinded by the sheer ‘sexiness’ of these technologies (Hyperloop!) without asking important and critical questions. Who is this benefiting the most, and whose lives will not change one bit – or worse, be harmed due to unintended consequences from cultural blind spots and unconscious bias?

Insight for policymakers and smart city proponents

Leaders are often pressured to adopt the Silicon Valley credo of ‘move fast and break things’ in an effort to come across as pro-innovation, but as a result, we rarely make time to pause and think critically about why we need to move fast, what things we might be breaking, and for whom that might create the bad kind of disruption. Our participants agreed that **slowing down and carefully considering the implications of technology and its benefits and harms is not anti-innovation**. Cities need to foster and facilitate greater digital literacy training for citizens, create time and space for meaningful conversations to ensure new smart city technology aligns with their citizens’ values and needs, and invest energy and expertise in providing greater transparency, accountability, and regulatory oversight to protect the public interest.

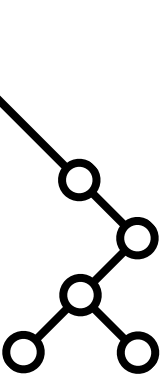


5. ARE SMART CITIES A GOOD OR BAD THING?

After a day and a half of engaging with peers and engaged citizens as well as 15 guest speakers, and with the help of a [game designed by strategic foresight experts at Idea Couture](#) to help people ‘think critically and imaginatively about emerging technology and the future of society’, we were able to get a glimpse of our participants’ hopes, dreams, and values as expressed through their visions and speculative ideas for the future – and as you may expect by now, **smart cities really isn’t about the technology.** The ideas we heard and saw reflected the topics and themes that this generation of civic leaders value most: affordable homes, adaptation to environmental and climate change, food security, renewable energy from non-extractive resources, reduced waste, holistic health and well-being, connection to community, and social equity.

One interesting observation is that the vast majority of speculations are positive and optimistic at their core. Despite the range of disruptive change that many of our participants have experienced in their lives and careers, from a global recession and housing crisis to the increasingly precarious nature of work, there was still significant hope and positivity in their ideas and insights. Perhaps it also indicates that it is still rather **difficult to predict or forecast the unintended negative consequences** of what start out as well-intentioned developments.

A particular area of concern did stand out from our participants. They were troubled by the potential for technologies rolled out in the name of ‘smart cities’ to exacerbate our already unacceptable levels of inequality and further increase our stratification of income, housing affordability, and economic opportunity, leading to the loss of jobs and independent businesses. It was clear to us that cities cannot truly be smart if they only advance the interests of the privileged few at the expense of already marginalized and vulnerable populations, and we were left with a strong, collective determination to **find a way forward without leaving anyone behind.**



Insight for policymakers and smart city proponents

People are not interested in technology for its own sake, and policymakers, technology vendors, and smart city proponents cannot write off concerned citizens as luddites who are fearful of change, or assume that the younger, tech-savvy generation are automatically on board. It all comes back to our desire for individual choice and control – the ability to opt-in and opt-out for specific actions, as opposed to a binary choice of ‘I accept’ or ‘I reject’ for living in a smart city. Cities cannot make this a simplistic ‘for/against smart cities’ binary – as we have learned with our participants, there is a still lot of nuance and grey areas we need to figure out, together.

Our participants, representing our next generation of civic leaders, know that the secret is not in embedding more sensors in infrastructure, or creating more intelligent algorithms to mine the data they collect to deliver more efficient services. Technology is a valuable tool that could provide transformative benefits to all, but only if we start to understand ‘technology’ as more than just apps and hardware. Access to technology is not enough – true inclusion requires widespread digital literacy that offers equitable economic and social opportunities, the ability to participate in our civic and democratic processes, and the agency to influence decision-making and contribute to collective problem-solving with and for their city.

At the end of the day, smart cities are nothing without smart citizens. True smart cities will be the communities who are able to empower, activate, and mobilize their most valuable assets – the talents, ideas, knowledge, creativity, and entrepreneurial spirit of the people who call it home.

ACKNOWLEDGEMENTS

Written by James Chan

Programming Lead, Impact Hub Ottawa

Artengine team

Eszter Gero, Ryan Stec, Remco Volmer

Impact Hub Ottawa team

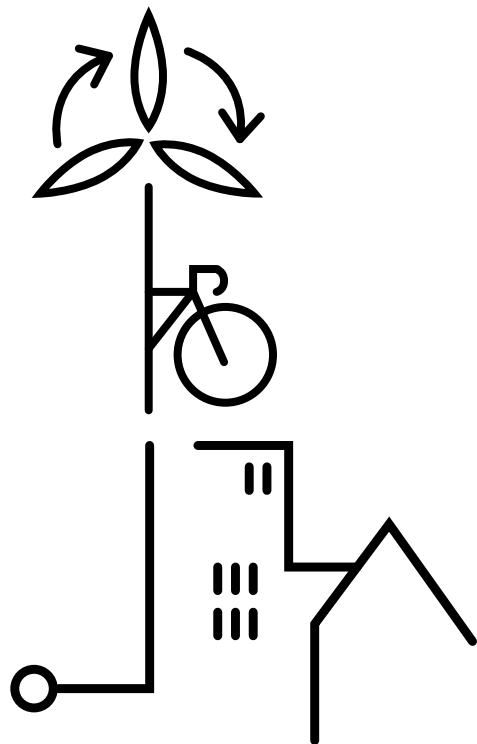
Elizabeth Cleland, Katie Miller, Vita Sgardello

Deloitte facilitation team

Jen Hunter, Christina Lomazzo, Morgan Nordstrom

Design team

Simon Guibord, Francesco Franciosi





THANK YOU TO OUR PARTNERS AND SPONSORS
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FUTURE CITIES FORUM - Summary Report



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