

Item:



Committee of the Whole Report

DATE: Monday, September 17, 2018

WARD(S): ALL

**TITLE: SMART CITY ADVISORY TASK FORCE
UPDATE AND RECOMMENDATIONS**

FROM:

Nick Spensieri, Deputy City Manager, Corporate Services

ACTION: DECISION

Purpose

To forward recommendations from the Vaughan Metropolitan Centre (VMC) Sub-Committee with respect to the Smart City Advisory Task Force.

Report Highlights

- Vaughan's application for the Federal Government's Smart Cities Challenge was submitted on April 24, 2018. Twenty communities will be short-listed by Summer 2018; each short-listed community will receive \$250,000 for full development of a proposal, and a winner will be announced in Spring 2019 for \$10 million.
- The Smart City Advisory Task Force made recommendations on four key areas: (i) Smart City Vision and Guiding Principles; (ii) Smart City Infrastructure; (iii) Governance Structure and Management Framework; and, (iv) Recommendations and Priority Action Items.
- Vaughan citizen engagements and consultations revealed enthusiasm for a Smart City future; 159 community outcomes and 404 big ideas and actions were generated during the engagement process.

Recommendation

The Deputy City Manager, Corporate Services, on behalf of the VMC Sub-committee, forwards the following recommendation from its meeting of June 12, 2018 (Item 3, Report No. 3), for Council's consideration:

- 1) That the recommendation contained in the following report of the Chief, Corporate Initiatives and Intergovernmental Relations, dated June 12, 2018, be approved;
- 2) That the presentation by Mr. Bill Hutchison, Facilitator, Smart City Advisory Task Force, and C4, presentation material titled "*Smart City Advisory Task Force Updates and Recommendations*", be received;
- 3) That the following be approved in accordance with Communication C1, Memorandum from the Chief, Corporate Initiatives and Intergovernmental Relations, dated June 12, 2018:
 1. That Attachment 1 to the report of the Chief, Corporate Initiatives and Intergovernmental Relations, dated June 12, 2018, be received; and
- 4) That the following deputations be received:
 1. Mr. Peter Cortellucci, Fenyrise Crescent, Vaughan;
 2. Mr. Tod Hofley, Communify, East Liberty Street, Toronto;
 3. Ms. Jane Wedlock, United Way Greater Toronto, Centurian Drive, Markham;
 4. Dr. Judy Farvolden, Executive Director, University of Toronto Transportation Research Institute, St. George Street, Toronto;
 5. Mr. Peter Lyman, Nordicity, Adelaide Street West, Toronto;
 6. Ms. Julie Morin Pede, Microsoft Corporation, Summerbreeze Court, Kleinburg; and
 7. Mr. William (Bill) Crago, Huawei Technologies Canada, Allstate Parkway, Markham.

Background

Recommendation of the Chief, Corporate Initiatives and Intergovernmental Relations, dated June 12, 2018

1. That the VMC Sub-Committee receive the Smart City Advisory Task Force Findings Report (Attachment 1);
2. That the VMC Sub-Committee forward for Council's consideration, the recommendations of the Smart City Advisory Task Force, as identified in the Analysis and Options section of this report under Summary of Recommendations and Priority Action Items;
3. That the recommendations of the Smart City Advisory Task Force be included in the 2019 Budget process; and
4. That the VMC Sub-Committee request Council to formally extend its special thanks to all members of the Smart City Advisory Task Force for their commitment, knowledge and advice on the strategic advancement of the City of Vaughan.

As of February 2018, Vaughan's population reached more than 335,000, and is estimated to grow to more than 488,000 by 2041. As cities grow, cities must now have to deal with the demands that come with population growth. How cities address these urban challenges associated with growth will be critical to a city's sustainability.

Cities are transforming into Smart Cities by using data, connected technology and collaboration to address challenges and improve quality of life.

To transform Vaughan into a leading Smart City, the Mayor requested that Staff create a Smart City Advisory Task Force (Task Force) to advise on a 'future city' vision and strategy for Vaughan that is based on the needs of citizens. (Report no. 2 of the Vaughan Metropolitan Centre Sub-Committee for consideration by the Committee of the Whole May 31, 2016).

The Smart City Advisory Task Force (Task Force) is Chaired by Mayor Maurizio Bevilacqua. Councilor Sandra Yeung-Racco served as the Vice Chair. The Task Force is comprised of 35 leading Canadian and U.S. leaders in various sectors of the economy. A majority (69 per cent) of Task Force members, are senior executives who are directly responsible for affecting change within their organization and have been working to implement Smart City initiatives. In addition, through an extensive recruitment process, seven Vaughan citizens were selected to participate. The Task Force is facilitated by William Hutchison, Chair, i-CANADA Alliance and Distinguished Research Fellow at the Munk School, University of Toronto, with more than 20 years' experience in building Smart Cities. [ATTACHMENT 2: Smart City Advisory Task Force Membership Biographies]

The Task Force recognized Mayor Bevilacqua and the City for championing the work of the Task Force as Vaughan continues to take a leadership role to innovate its processes and systems to prepare for planned growth.

As noted, the membership of the Task Force represented a broad representation of economic sectors that contribute to city building. The following is a list of the sectors:

- Education
- Transportation
- Social Welfare
- Arts & Culture
- Health Care and Medical Community
- Research & Innovation
- Information, Communications and Technology Companies
- Financial Services Industries
- Construction Industry
- Environment

To ensure citizen priorities are at the forefront of Smart City, extensive citizen engagement has been undertaken which defined issues and challenges regarding Vaughan's future.



Figure 1: City of Vaughan’s citizen engagement feedback loop

Various Surveys and Survey Models were conducted to solicit citizen needs and priorities

The City engaged with citizens by traditional email through established e-lists. Including:

- Vaughan Business Enterprise Centre (2,700);
- Vaughan Chamber of Commerce (900);
- City of Vaughan internal staff;
- City of Vaughan Social Media Channels: Twitter – 12,843, Facebook – 4,722, Instagram – 2,519;
- “On the street” (intercept), surveys using mobile devices were conducted at Winterfest with more than 100 citizens participating.

Mayor and Members of Council also reached out with an email survey to their respective constituents. [ATTACHMENT 3: Social media creatives used by Council]

The digital transformation tool for decision-making processes, PowerNoodle, was used during the workshops to facilitate meaningful conversations with stakeholders.

To obtain the expertise of a wide spectrum of experts, the City held six focused workshops and a community engagement workshop, which were open to all citizens. The themes included: millennials, arts and culture, inclusion and empowerment, environmental sustainability, industry and innovation, health and wellness. The seven workshop/focus groups were each comprised of approximately 20 individuals who had a high degree of interest or knowledge in the subject.

The small group workshops were conducted using intuitive decision software, PowerNoodle, that organized feedback and prioritized 404 big ideas and 159 outcomes. These community outcomes and ideas were then reviewed by the Task Force. (Figure 2)

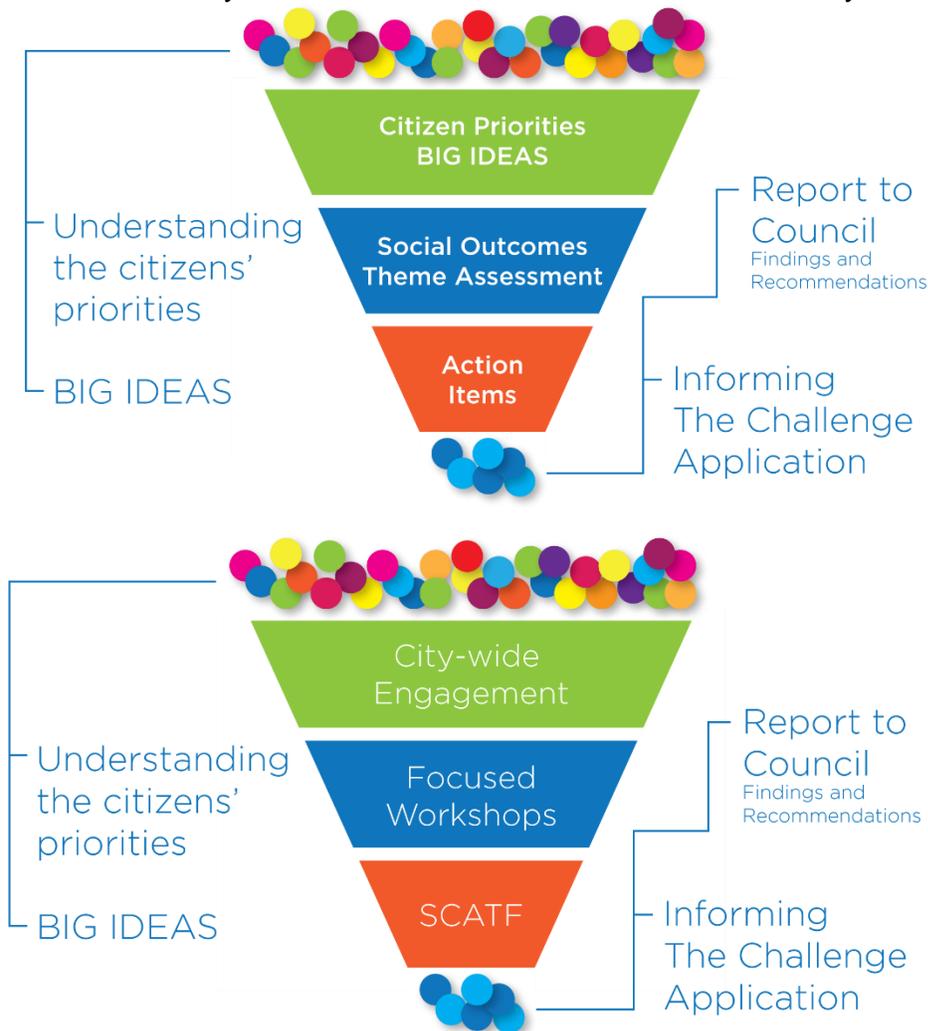


Figure 2: Citizen engagement and ideation process

An art-inspired curated Smart City event, called “smARTcities: Exploring the Digital Frontier” offered a unique engagement component to Vaughan citizens.

Artist Ron Wild integrated Vaughan-centric imagery into a symbolic visual vocabulary to envision the transformative role technology and Internet of Things (IoT) can play. Smart City is the current subject of Art on the Slate and the City used art as a medium to educate and facilitate conversations with citizens on Smart Cities. As part of this exhibit, the “smARTcities SALON Night” was an engaging discussion held with an expert panel, consisting of artist Ron Wild, Oren Berkovich, CEO, SingularityU Canada Summit, Lilian Radovac, Urbanist Professor, University of Toronto and the City of Vaughan CIO, Frank Di Palma. Members of the audience contributed to an engaging discussion about art, innovation and city-building, filtered through the context of Smart City transformation. As part of this process, Vaughan citizens were encouraged to submit digital interpretations

illustrating the transformative potential for Smart City technologies and all submissions will be integrated into an original MEGAsmARTcities digital map remixed and composed by Ron Wild.

Vaughan citizens were very engaged during the entire consultation process and were enthusiastic about the potential for Smart City developments.

During the consultation process for the Smart Cities Challenge, citizens provided extensive feedback on top-of-mind issues they thought could be addressed using a Smart City approach. Citizens wanted to see more connected and vibrant communities with a strong “One Vaughan” sentiment. The need for mental health awareness was a topic that came up during the consultations, as well as building inclusive communities to encourage the participation of all citizens, including the marginalized, youth, aging, newcomers etc. Many also expressed the need to make Vaughan the place to go to and not only the place to leave, there was an emphasis to build a vibrant Vaughan with more jobs, entertainment and programming.

City staff also took into consideration previous stakeholder engagements and consultations that formed key City of Vaughan strategies. The findings and results were reviewed from the following: Digital Strategy 2.0, Citizen Satisfaction Survey, Service Vaughan Strategy, City of Vaughan Strategic Plan: Vision 2020, Green Directions Vaughan, Active Together Master Plan, VMC Cultural Framework and Public Art Plan and Creative Together: A Cultural Plan for the City of Vaughan. Each of these strategies and plans included extensive consultations with citizens, staff and other key stakeholders.

Previous Reports/Authority

1. [Smart City Task Force: Creating a Smart City of Excellence, June 7, 2017](#)
2. [Launch of The Mayor’s Smart City Advisory Task Force: Creating a Smart City June 27, 2017.](#)
3. [Smart City Advisory Task Force Recruitment of Citizen Members January 30, 2018](#)
4. [Smart City Advisory Task Force – Extended Recruitment of Citizen Members, April 11, 2018](#)

Analysis and Options

Based on the findings from the citizen engagement process, the Task Force reviewed and analyzed the inputs to compile the following recommendations and call to action, as outlined in the Smart City Advisory Task Force Findings Report (Attachment 1). Overall, a theme of ‘urgency’ emerged. There is a sense of urgency for Vaughan to be a Smart City, to be smarter about the way the City thinks about the future.

The Task Force identified the following four areas as priority for the City:

1. Smart City Vision and Guiding Principles.
2. Smart City Infrastructure.
3. Governance Structure and Management Framework.

4. Summary of Recommendations and Priority Action Items.

1. SMART CITY VISION AND GUIDING PRINCIPLES

Extensive citizen consultations revealed that Vaughan's vision and definition for a Smart City should be inclusive and vibrant. Collaboration, through a culture of sharing and learning, is the core value of Vaughan's Smart City work. A Smart City is a result of smarter solutions across all sectors, therefore requires a holistic approach to city building. Ensuring no one is left behind, this means policies and programs are inclusive and enable every citizen an equal opportunity to participate.

Smart City initiatives also align with the City of Vaughan's digital transformation that is already underway and supports the four focus areas of the Digital Strategy:

An engaged community – a Smart City enables citizens to be more aware and informed of what's happening in their community and providing the resources for citizens to be fully engaged in the City.

Citizens can do business with the City through digital channels – a Smart City provides seamless and efficient digital services for citizens to do business with the City.

Be an open and transparent government – a Smart City uses data (this data is open) to facilitate dialogues with citizens and for informed decision making.

Internal transformation and modernize city processes – a Smart City changes the way the City of Vaughan staff work and interact and engage with citizens and adopting a culture of data.

A Smart City is about better use of resources, cost savings, making better decisions based on the use of data, efficient and seamless services, community collaboration and partnerships, improvements to safety and security, ease of doing business and equal opportunities for all citizens.

Communication and continuous citizen engagement is an important component for successful Smart City implementation. The City of Vaughan's updated strategic plan Vision 2040 should include a Smart City approach that is shaped and informed by citizens. The City of Vaughan needs to continue its citizen engagement with a strategic communication plan to promote awareness of the benefits of a Smart City.

The Task Force recommends that the City of Vaughan incorporate a Smart City focus in its next Term of Council Service Excellence Map. Smart City should be an overarching theme in the strategic plan in order to ensure every department is guided by Smart City policies. A Smart City communication plan and strategy should be developed for citizen engagement and continued feedback from Vaughan citizens.

2. SMART CITY INFRASTRUCTURE

Communication infrastructure is the foundation for a Smart City.

Infrastructure is more than just hard physical infrastructure that consists of roads and bridges, more importantly, a Smart City requires the right communication infrastructure. High-speed fibre networks and points of presence (POP).

Having the right infrastructure in place at the onset of development is preferable. Smart City initiatives will require the City to work closely with partners and businesses, including developers, engineers, architects and technology providers to ensure communication infrastructure is available. Once hard infrastructure is built, it is difficult and costly to integrate communication infrastructure. This must be considered at the initial planning stage. The Task Force suggests the City of Vaughan consider long-term needs and plan ahead.

It is also important for the City of Vaughan to participate in international Smart City networks. Staff are in discussions with the U.S.-based Smart Gigabit Cities “SGC” Cluster to become the first Canadian city to participate in this network. The SGC Cluster includes 20 U.S. mid- and smaller-sized cities, along with the City of Adelaide, Australia. Created by U.S. Ignite, a not-for-profit the SGC is positioned to stimulate innovation, the SGC project was one of the U.S. government’s Smart Cities Challenge initiatives in 2015. Cities in the cluster each have an innovation district for start-ups, and each city commits to creating two new Smart City Apps and sharing them with the other cities in the Cluster, thereby creating and sharing a total of 40 new Smart City Apps. The City of Vaughan will become a full participant using high-bandwidth, low-latency technology called SAVI that is compatible with the U.S. technology. Participating in this cluster will provide a unique opportunity for start-ups in Vaughan to collaborate with start-ups in the 20 U.S. cities. It will also facilitate collaboration and engagement between Vaughan’s socially focused organizations, to share ideas and easily arrange online high-bandwidth collaboration and discussions using the gigabit networks in each participating city.

3. GOVERNANCE STRUCTURE AND FRAMEWORK

Task Force members recommend a “top-down” management approach to ensure successful implementation of Smart City initiatives. Former Waterfront Toronto CEO, and current Task Force member, John Campbell, advocates for Smart City initiatives driven by one person with an executive leadership role reporting directly to the head of the organization.

There must be strong central leadership and executive ownership in order for Smart City initiatives to be implemented and successful. This could be a Smart City Office or Smart City business unit. It was noted that this office/business unit have the authority and capacity to coordinate Smart City initiatives across the City. Some cities have Smart City offices and others have a Chief Transformation Officer who is organized within the City Manager’s Office.

In the case of the City of Vaughan, the Task Force recommended that the Smart City office would be ideally situated within the Economic and Cultural Development Department as a business unit. The Smart City Office should also have close collaboration with the Office of the Chief Information Officer as Smart City initiatives will be linked closely to the City of Vaughan's digital transformation through the implementation of the Digital Strategy 2.0.

The Task Force also recommended that the Task Force should also continue its work to advise the Mayor, and the newly established Smart City office to help develop the Smart City strategy and roadmap.

Big data and sensors are synonymous with Smart Cities and therefore data governance and intellectual property, resulting from Smart City initiatives, need to be examined and taken into consideration. Smart City technology and initiatives should be implemented for the greater good of citizens, and therefore data and intellectual property need to be protected to ensure this happens and to prevent misuse. Lessons should be taken from the Toronto Waterfront and Sidewalk labs experience with regards to data governance and privacy issues.

The Task Force recommends that the City of Vaughan create a Smart City business unit in Economic and Cultural Development with a team of dedicated staff to develop a business plan, strategic roadmap and budget for Smart Cities.

4. SUMMARY OF RECOMMENDATIONS AND PRIORITY ACTION ITEMS

As per the Findings Report of the Smart City Advisory Task Force (Attachment 1), the following are high-level recommendations, put forward by the Task Force to be adopted by Council.

1. City of Vaughan recognize and incorporate Smart City as a priority in the 2018-2022 Term of Council Service Excellence Map;
2. Smart City citizen engagement plan be developed;
3. Council continue the Smart City Advisory Task Force for the next term of Council and that Economic and Cultural Development staff work with the Office of the City Clerk to undertake the process in 2019;
4. Economic and Cultural Development Department be identified in the Corporation's Organizational Structure as the Secretariat Office for a corporate wide Smart City Strategy, Program and Initiatives; and
5. Staff in the Economic and Cultural Development Department prepare a multi-year Smart City business plan, including a strategic roadmap, a governance model, terms of reference, and budget for inclusion in the 2019 Budget process.

As per recommendation 5, and based on priorities identified by Vaughan citizens throughout the engagement process, the Task Force suggests that City staff investigate and include in their work plan the following priority action items:

- i. Conduct a survey and mapping of existing Smart City initiatives that are already underway within the various city departments and divisions to identify strengths and gaps. This mapping will help form a basis for the development of a Smart City roadmap.
- ii. Identify best practices from cities around the world that have implemented successful Smart City initiatives to solve challenges based on citizen priorities.
- iii. Consider and actively pursue alternative funding models and opportunities for Smart City initiatives, such as crowdsourcing and fundraising. Options could include the creation of a Smart City fund, which would include contributions from businesses, community partners, City of Vaughan, York Region and other government sources. Dedicated Smart City funding in the City's annual budget may be another option.
- iv. Examine and investigate policies around data governance and intellectual property of Smart City developments.
- v. Create an innovation platform for businesses, entrepreneurs, community partners, and cities to provide input and feed into the City of Vaughan's Smart City roadmap.
- vi. Vaughan to create its own "Supercluster" for innovation.
- vii. Establish a start-up/scale-up ecosystem to support Vaughan entrepreneurs.
- viii. Establish Vaughan sponsored co-working/incubator space, that can also be an event space for people to collaborate in the sharing of ideas.
- ix. Investigate the demand and need for expanded communication infrastructure network investments required to support Smart City developments.
- x. Develop a "One Vaughan Portal" and App with real-time information on traffic, events and other services.
- xi. Create a Vaughan Smart City 3D model to communicate to citizens what a Smart City would look like and the potential benefits.
- xii. Consider Smart City pilot projects in the Vaughan Metropolitan Centre, in order to capture unique opportunities for seamless integration while the City's new downtown is still at the development stage.

Financial Impact

All incurred costs to date associated with the Smart City Challenge application and the Task Force meetings were in the 2018 Economic and Cultural Development budget.

The preliminary cost for implementing the recommendations by the Task Force is approximately \$150,000 annually. This includes costs associated with a dedicated new full-time position, however, a more fulsome costing exercise and business plan will be submitted with the 2019 budget process.

Broader Regional Impacts/Considerations

The City of Vaughan has been selected by the World Council on City Data (WCCD) to be one of the first cities to pilot the new international standard for Smart Cities, ISO 37122. The City of Vaughan has been part of the WCCD network since 2011 and is already a platinum certified city for ISO 37120, an international standard for sustainable cities. The WCCD hosts a network of more than 100 international cities including

London, Dubai, Amsterdam, Shanghai, Melbourne, Los Angeles and Boston, just to name a few, that are committed to building smarter cities through the use of standardized open data for sharing and learning. Being chosen as a pilot city by the WCCD, the City of Vaughan can help other municipalities in York Region and the province to implement this new standard. Once implemented by other municipalities within York Region, this data on Smart Cities can be aggregated and scaled up to the regional level for economic development to attract and retain investments and skilled talent, as well as profile the Region's innovation.

York Region is an important partner for the City of Vaughan in its Smart City strategy and implementation. Vaughan's Smart City development also aligns with the York Region Broadband strategy to improve connectivity infrastructure. The York Region Broadband Strategy report was adopted by Regional Council on May 15, 2014, which provided recommendations for improving access to high-speed Internet connectivity for businesses and institutions and citizens throughout York Region.

The vision for the York Region Broadband Strategy is to establish York Region as a Gigabit Region, recognized for its leadership in fostering an eco-system of collaboration and business innovation within a connected lifestyle community. Smart City initiatives, as recommended in this report by the Smart City Advisory Task Force for the City of Vaughan, supports the vision for York Region to become a Gigabit Region.

Furthermore, York Region communities, such as Markham and Richmond Hill, are also engaging in Smart City developments. A Smart City approach is focused on collaboration and connectivity, therefore benefits of Smart City initiatives in one municipality will naturally extend to other citizens within York Region.

Conclusion

The Task Force's primary objective was to provide advice to Council and the City administration, including high-level political and community perspectives into the development of a smart city initiative. Cities around the world are moving toward a Smart City approach, and it is important for the City of Vaughan to continue moving forward to become one of the world's leading Smart Cities.

Attachments

1. Smart City Advisory Task Force Findings Report – to be provided at the meeting as Communication C1.
2. Smart City Advisory Task Force Member Directory.
3. Social Media Creatives used by Council.

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