TORONTO

REPORT FOR ACTION

Digital Infrastructure Plan – Update

Date: January 9, 2020
To: Executive Committee
From: Chief Technology Officer, Information and Technology Division
Wards: All

SUMMARY

The purpose of this report is to provide an update on the work that has been done to develop a Digital Infrastructure Plan (DIP) for the City of Toronto. Specifically, the report includes:

- Initial results from public and stakeholder consultations initiated in November 2019 regarding Working Principles for digital infrastructure; and
- A work plan to develop the DIP.

For the purposes of this report, Digital Infrastructure is defined as: *infrastructure that creates, exchanges or uses data or information as a part of its operation*. Digital infrastructure includes physical structures, cabling and network systems, software systems, data standards and protocols as well as the data itself. Some examples include sensors (cameras, GPS sensors, microphones, etc.), broadband and telephone networks, Wi-Fi, desktop software, web pages, and mobile apps and open data standards.

Cities are at the forefront of technology innovation and the closest democratic institutions to the people. Toronto, long the economic engine of Canada, has more recently emerged as a global technology powerhouse. Toronto is also a growing city, facing many opportunities, challenges, and emerging issues in a shifting global and regional landscape. Both the Federal and Provincial governments are in the midst of their own policy development processes and public consultations with respect to digital infrastructure.

The City has a number of internally focussed policies which regulate specific digital infrastructure topics. However, there is currently no cohesive policy or plan for the management of this infrastructure. Using existing policies as a foundation, Toronto can lead by developing a comprehensive plan that also serves as an outward evaluation tool for external proposals with digital elements.

Creating a DIP is a significant undertaking due to the scope of work and complexity of issues. The starting point to develop the DIP is to build consensus around a set of clear ethical principles that articulate a vision for the use of digital infrastructure and guide decision-making. Throughout the latter half of 2019, staff conducted research and

jurisdictional scans, including working with Federal and Provincial policy staff, to develop draft principles for Toronto's DIP. The principles will provide guidance when deciding if a proposed use of digital infrastructure is necessary; complies with policies and regulations; and aligns with stated values. The digital infrastructure principles outlined within this report address the following key areas:

1. Equity and Inclusion;
2. A Well-run City;
3. Social, Economic and Environmental Benefits;
4. Privacy and Security; and
5. Democracy and Transparency.

These draft principles were the focus of stakeholder and public consultations that were initiated in November 2019. Three public meetings were held in December 2019; one of the meetings was live-streamed. Approximately 75 people attended these consultations. An additional 218 people have viewed the live stream. An online questionnaire was developed to engage participants who may not have had the opportunity to participate at one of the in-person events. Fifty-four questionnaires were completed and ten unique emails were submitted to digitalfeedback@toronto.ca. Overall, participants of these meetings expressed support for the draft principles. The draft principles have been refined based on initial consultation feedback. The refined version are referenced as "Working Principles" in the recommendations within this report.

Staff will continue to consult with stakeholders and the public on the Working Principles further into 2020. Other key tasks to be undertaken as part of the work plan to develop the DIP are summarized in Attachment 1. These include:

- Implementing a Community Advisory Group;
- Researching matters related to data governance;
- Creating application and evaluation standards;
- Clarifying internal city processes; and
- Developing fine-grained implementation policies.

Developing the DIP will be an iterative process that will allow further guidelines and processes to be established as the plan evolves. The Working Principles and processes can also be applied to digital infrastructure proposals going forward and as additional details are created and further consultations conducted. The current stage, with the proposed Working Principles and existing supporting processes, sets for the foundation for this continued work.

Development of the DIP is being led by the Information and Technology Division with the support of City Clerk's Office, City Planning Division, and Strategic Communications. In addition to DIP development work, the Waterfront Secretariat has also been the lead on items having relevance to the Quayside project. Social Development, Finance and Administration, People and Equity, the Indigenous Affairs Office, Economic Development and Culture, People and Equity, Transportation Services, Toronto Water, Purchasing and Materials Management Division (PMMD), Legal Services, and the City Manager's Office were consulted in the preparation of this report and in the development of project materials.

RECOMMENDATIONS

The Chief Technology Officer, Information and Technology Division, recommends that:

1. City Council adopt the following Working Principles, and related vision statement, as the guiding framework for the City's Digital Infrastructure Plan:

a. Equity and Inclusion
Digital Infrastructure will be used to create and sustain equity, inclusion, accessibility, and human rights in its operations and outcomes. Digital Infrastructure will be flexible, adaptable, interoperable and responsive to the needs of all Torontonians, including equity-seeking groups, Indigenous people, those with accessibility needs and vulnerable populations;

b. A Well-run City
Digital Infrastructure will enable high quality, resilient and innovative public services, and support evidence-based decision-making;

c. Social, Economic and Environmental Benefits
Digital Infrastructure will contribute to positive social, economic and environmental benefits by supporting the success of Toronto’s residents, businesses, academic institutions and community organizations;

d. Privacy and Security
Toronto’s Digital Infrastructure will operate in a way that protects the privacy of individuals in accordance with legislative requirements, and be safe from misuse, hacks, theft or breaches;

e. Democracy and Transparency
Decisions about Digital Infrastructure will be made democratically, in a way that is ethical, accountable, transparent and subject to oversight. Torontonians will be provided with understandable, timely, and accurate information about the technologies in their city, and opportunities to shape the digital domain; and

2. City Council direct that the Working Principles be applied, in addition to existing policies, standards, and processes, in the evaluation of any digital infrastructure proposal that is submitted to the City prior to City Council's adoption of the Digital Infrastructure Plan.

FINANCIAL IMPACT

There are no financial implications beyond what has already been approved in the current year’s budget. Any additional resources required in future years will be built into future year budget requests and/or future staff reports for approval.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

EQUITY IMPACT STATEMENT

The City's Equity Lens Tool has been used to review the high level objectives and Working Principles of the Digital Infrastructure Plan. The Digital Infrastructure Plan's principle on Equity and Inclusion provides a commitment that existing and future digital infrastructure will be used to create and sustain equity and inclusion in its operations and outcomes. This work will include the use of the City's Equity Lens on existing and future digital infrastructure projects. An equity lens will continue to be used through all phases of the plan: from initiation and planning through to implementation, monitoring and evaluation.

DECISION HISTORY

On October 29, 2019, City Council directed the Chief Technology Officer (CTO) to take on an expanded City-wide scope and mandate providing support, oversight and direction on standards, practices and policies to all City divisions and the listed agencies and corporations, with immediate effect with respect to all technology assets, goods, and services. Council also directed the CTO to report on a centralized model implementation plan. Council further directed the City Manager to request listed agencies and corporations conduct risk assessments on cyber security and risk mitigation plans in the latter half of 2020.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.AU4.1

On June 18, 2019, City Council authorized the City Manager to engage in the necessary arrangements for the City of Toronto to sign on to the declaration of Cities Coalition for Digital Rights; and to evaluate City divisional policies on ethical digital standards and create a code of technological practices to be implemented across City divisions.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.MM8.4

On June 6, 2019, the Executive Committee considered a report titled "Quayside Update" from the Deputy City Manager, Infrastructure and Development Services, and requested information from staff on a number of items including:

a. the relationship between Sidewalk Labs' proposed data trust and the vision for smart city governance;

b. whether it is Sidewalk Labs, Waterfront Toronto or the City’s data being shared and who has custody/control or ownership of the data that will be governed by the ‘trust’;

c. the definition of a resolution process for the trust for scenarios for the governance of data where there is no group consensus or input as to its collection; and

d. whether there is a data governance model for all data collected through the Sidewalk Toronto project that falls within Sidewalk’s definition of “urban data” (for which the ‘trust’ is proposed) and who would determine its parameters or if the data governance model under consideration only deals with a subset of data;

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.EX6.1

On March 6, 2019, the Economic and Community Development Committee directed the General Manager, Parks, Forestry and Recreation and the Chief Information Officer to include in any connectivity plans and strategies for improvements to affordable, high-speed internet that are currently underway, the feasibility of implementing Public Wi-Fi in Community Recreation facilities including community centres and arenas.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.EC2.11

On February 26th, 2019 City Council directed staff to develop a City-wide policy framework and governance model associated with digital infrastructure and data, such as Smart Cities, and a work plan for implementation. To support this work, staff were directed to conduct a City-wide public consultation process on the data governance principles and proposed model to inform the implementation of the plan to be applied to Quayside and other Smart City developments.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.MM3.2

On May 22, 2018, City Council directed the Chief Information Officer, the Chief Transformation Officer, the Executive Director, Social Development, Finance and Administration and the Director, Equity, Diversity and Human Rights, in consultation with the City Clerk's Office to report to City Council with a detailed City of Toronto Disaggregated Data Strategy that identifies the specific processes and resources required by City divisions to incorporate disaggregated data collection, analysis and reporting to ensure equitable program planning and service delivery for Toronto residents that is also in accordance with the City of Toronto Open Data Master Plan.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.EX34.10

On April 24, 2018, City Council requested the City Manager to incorporate a Digital Infrastructure Plan within the Smart City work.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.EX33.8

On December 5, 2017, City Council directed the Chief Information Officer and the General Manager, Economic Development and Culture, in consultation with other City Divisions, Agencies and Corporations, to establish an interdivisional Internet Connectivity governance structure, comprised of a Working Group and Steering Committee; this governance structure will coordinate efforts, identify options and seek City Council direction as required to improve access to affordable high-speed internet for all Toronto residents and businesses, and to ensure that City infrastructure and regulation evolves and aligns with improving technology standards.

On December 5, 2017, City Council also directed the Chief Information Officer and General Manager, Economic Development and Culture to further analyze the digital divide by comparing socio-economic data, including from the 2016 Census, and available geographic broadband penetration data to help support the digital access goals of the City's Poverty Reduction Strategy.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.ED25.4

COMMENTS

This report provides an update on the work that has been done to develop a city-wide policy framework and governance model associated with digital infrastructure, and a work plan for implementation.

1. Context and Updates

This section of the report provides updates regarding previous City Council directions, as well as context for related issues.

Connected Community / Smart City Context

Municipal services around the world are becoming increasingly digitized. Some examples of this in Toronto include:

- the availability of application-based city services, such as the "Waste Wizard" app;
- automated transit fare collection; and
- use of traffic cameras to respond to emergencies and monitor congestion.

These types of services often collect large amounts of data, often in real-time, which can help the City gain a greater understanding of the quality and effectiveness of City services. Cities that use digital technologies for these types of purposes are frequently referred to as "Smart Cities". Although the definition of this term continues to evolve, a Smart City is generally understood to be one that uses data and digital infrastructure to solve challenges and deliver services efficiently and effectively to residents.

Emerging trends and challenges necessitate new and updated policies and processes to ensure that our community is supported by trustworthy and secure digital infrastructure. The City's Information and Technology Division leads the work related to Smart Cities through its Connected Community program. On April 24, 2018, City Council requested the City Manager to incorporate a Digital Infrastructure Plan within the Smart City work. This work is necessary to set direction and assess digital infrastructure proposals in the broader context of a connected community.

Developing a Digital Infrastructure Plan for Toronto

Development of the Digital Infrastructure Plan (DIP) has also been initiated in response to direction from City Council in February 2019 to develop a City-wide policy framework and governance model associated with digital infrastructure and data. This work is consistent with direction received in June 2019 to evaluate policies on ethical digital standards and create a code of technological practices.

The use of digital infrastructure is one of many tools to help the City achieve its strategic goals and priorities. As the use of digital infrastructure to provide City services and manage City assets evolves, the way in which information is collected, used, managed and protected must also evolve. The Digital Infrastructure Plan (DIP) will modernize and formalize the roles, functions, and procedures within which digital infrastructure decisions at the City are made.

Similar to the way in which the Official Plan guides decision-making around the physical realm (buildings, infrastructure, parks, open spaces etc.), the DIP is envisioned as a document that will define and guide decision-making within Toronto's digital realm. A number of policies, strategies and processes within this decision-making framework already exist (e.g. Business Case/Value Outcomes, Privacy Impact Assessments, Threat Risk Assessments). However, the use of digital infrastructure that is emerging directly through the private sector and through public-private partnerships is creating a climate of uncertainty around issues such as data governance, privacy, and security. These issues will be studied as the DIP is built out. Any gaps in policy that are identified through this process will be addressed and integrated into the DIP. Creation of the DIP will ensure that all existing and new policies, standards and processes related to digital infrastructure are housed in a centralized space.

A process of formalized governance for digital infrastructure will also be established as part of the work to create the DIP. This will ensure that decisions (and processes and procedures) related to digital infrastructure are made in a consistent manner that reflect corporate objectives and the corporate Strategic Plan.

DIP Implementation: Emerging Direction

The DIP is envisaged as a tool to help guide day-to-day as well as long-term decisions related to digital infrastructure. It will also be used to help evaluate internal and external proposals in the digital realm. As an example, if a City division wishes to use sensors to collect information to inform decision-making related to a project, that division would refer to the policies and processes within the DIP and ensure the project is implemented in a manner that complies with the DIP. For further clarity, it is anticipated that the DIP will not contain detailed implementation plans for corporate or division-specific projects (i.e. in the example above, the DIP would not provide specific guidance on where the sensors should be located to achieve the objectives of that project). The Quayside project, discussed further below, is another example of a project that would need to be implemented in a manner that complies with the DIP. Any proposals received before the DIP is complete would be examined in light of both existing regulations and policies, and the emerging Plan, to determine the appropriate evaluation process.

Throughout the work plan period, the DIP will be designed to reflect feedback that is provided through the consultation channels. Staff will also monitor the technology and regulatory sector to ensure that the DIP responds to current and emerging legislative requirements. The DIP will also reflect Information Management and privacy considerations with regards to digital infrastructure projects.

At this stage of the process, it is envisioned that the DIP may include, but shall not be limited to, the following Chapters:

1. Introduction, including principles
2. Regulatory context, including applicable legislation
3. Digital governance, including City of Toronto policies
4. Application intake and evaluation process
5. Monitoring (regular monitoring and updates to ensure the Plan remains current)
6. Definitions

Privacy, Freedom of Information, and Intergovernmental Context

In its use of digital infrastructure, the City is subject to Federal and Provincial Legislation. It is also subject to Municipal by-laws, as well as other existing City Policies, Strategies and Standards.

Collection of Personal Information and Personal Health Information by the City of Toronto

Two Provincial Acts regulate the City's collection of personal information and personal health information:

- The Municipal Freedom of Information and Protection of Privacy Act (MFIPPA); and
- The Personal Health Information Protection Act (PHIPA).

The Information and Privacy Commissioner of Ontario provides oversight of these access and privacy laws.

MFIPPA is noteworthy for its impact on the way that the City may collect, use, store, disclose, and dispose of data. The purpose of MFIPPA is to:

a) Protect personal information held by government organizations and to provide individuals with a right of access to their own personal information.

b) Provide a right of access to information under the control of government organizations in accordance with the following principles:
    - information should be available to the public;
    - exemptions to the right of access to information should be limited and specific; and
    - decisions on the disclosure of government information may be reviewed by the Information and Privacy Commissioner.

In the Smart City context, a Federal Act - the Personal Information Protection and Electronic Documents Act (PIPEDA) - would also apply to the City's collection and use of personal information in relation to any commercial activities that the City may participate in (i.e. activities which are outside of the scope of traditional municipal services). The Office of the Privacy Commissioner of Canada provides oversight of this Act.

It is important to note both the Federal and Provincial governments are in the midst of their own policy development processes and public consultations with respect to digital infrastructure. An overview of some of this work and intergovernmental work is attached as Attachment 2.

Cyber Security

The City's increasing use of digital infrastructure requires parallel investment in cyber security to ensure City services are not compromised, and that the City’s networks and datasets are protected. The City currently uses network protection technology and cyber security practices to secure its infrastructure and has made progress on a number of initiatives to improve security and ensure the protection of assets. A formal Cyber

Security Program was established in 2018 and mandatory cyber security awareness training was rolled out for all City staff in 2019. The purpose of this training was to help staff recognize possible cyber threats; learn leading practices on how to safely use the City's IT systems and assets; and learn how to report possible cyber threats. A new position of Chief Information Security Officer was also created in 2019, with accountability to establish a business aligned cyber strategy, advise on and manage cyber risk, and build out the existing cyber posture. In developing the Digital Infrastructure Plan, ensuring proactive cyber-security requirements will be considered in the context of industry and global best practices. This work will respond to direction received from City Council on October 29, 2019, to develop a robust cybersecurity program.

Technology and Economic Development

Toronto has experienced strong economic growth in recent years due in large part to its emergence as a global tech powerhouse. The Toronto Region's tech sector is currently the fourth largest in North America, fueled by nearly 230,000 skilled workers. Major tech firms including Microsoft, Uber, Intel, Pinterest, Instacart, and Shopify have recently made major tech investments or created new offices in Toronto. Industry subsectors including Fintech, Artificial Intelligence, and Blockchain also have a strong presence, further demonstrating Toronto's diverse economy and deep talent pool. The tech sector is one of many stakeholders that will need to be engaged in development of the Digital Infrastructure Plan.

Poverty Reduction and Digital Divide

Following direction from City Council in 2017 on advancing broadband infrastructure and internet connectivity, staff have formed an interdivisional working group centered on Internet Connectivity. Group members have also conducted research into the availability and affordability of internet service in Toronto. In 2019, the Information and Technology division secured resources and began work on the "TO Connect" project. This project aims to leverage City assets in kind for vendor(s) to deliver free Wi-Fi to sites such as Community Centres and Long Term Care homes. A RFP for this project is planned to be released in mid-2020.

The Quayside Project

On June 6, 2019, the Executive Committee considered a report titled "Quayside Update" which led to directions related to the Digital Infrastructure Plan. The DIP will be a key tool for the City to use in evaluating proposals such as those related to the Quayside project.

In June 2019, Sidewalk Labs submitted their Draft Master Innovation Development Plan (MIDP) to Waterfront Toronto for review. Sidewalk Labs' proposed MIDP included initiatives related to data collection, data use and governance such as the formation of a new "Urban Data Trust". On October 31, 2019, Waterfront Toronto and Sidewalk Labs agreed that Waterfront Toronto would evaluate a subset of the proposals based on the resolution of certain "threshold issues" that had been the subject of negotiation between Waterfront Toronto and Sidewalk Labs. On November 19, 2019, Waterfront Toronto

hosted a public briefing to update the public on the project. Waterfront Toronto anticipates further public consultations in 2020.

On November 14, 2019, Sidewalk Labs released a "Digital Innovation Appendix (DIA)" providing updates to the MIDP which reflect the threshold issues resolution process described above. The DIA also provided broader updates and further detailed information on the digital innovation proposals included in the MIDP and Sidewalk Labs' approach to responsible data use. One important change included in the DIA was the removal of the proposal for an "Urban Data Trust". Sidewalk Labs also agreed to not use "Urban Data" as a term, and instead rely on existing terminology and legal constructs. Sidewalk Labs also agreed that all personal information collected through the project would be stored and processed in Canada. Given that Sidewalk Labs is no longer proposing the creation of a data trust, directives 1(a) – 1(d) from the June 2019 Executive Committee no longer require further direct exploration. A broader examination of issues related data governance are discussed further below within the Work Plan Stage 1 Update.

To inform the evaluation of project proposals, Waterfront Toronto has developed Draft Digital Principles which have been presented to the public. Building on these principles, Waterfront Toronto is creating "Intelligent Communities Guidelines" that would apply to private companies deploying digitally enabled solutions in the Designated Waterfront Area, including Quayside.

As discussed in more detail below, the City's Digital Infrastructure Working Principles were informed by Waterfront Toronto's work. Staff input to Waterfront Toronto's future work would be guided by the City's Working Principles.

The next major decision point for Waterfront Toronto's Quayside project is expected in March 2020. Should Waterfront Toronto's Board decide to move forward with Quayside, the City's review and evaluation of the proposal would proceed as per the work plan presented to Executive Committee in June 2019. City staff would undertake a comprehensive review of the Quayside MIDP along with the related Waterfront Toronto Board decision, in consultation with relevant City Divisions and Agencies, and report back to the Executive Committee. This evaluation would include a rigorous City-led public consultation process and staff report. The timing of this report would likely be in the fall of 2020 given the revised schedule of Waterfront Toronto and Sidewalk Labs.

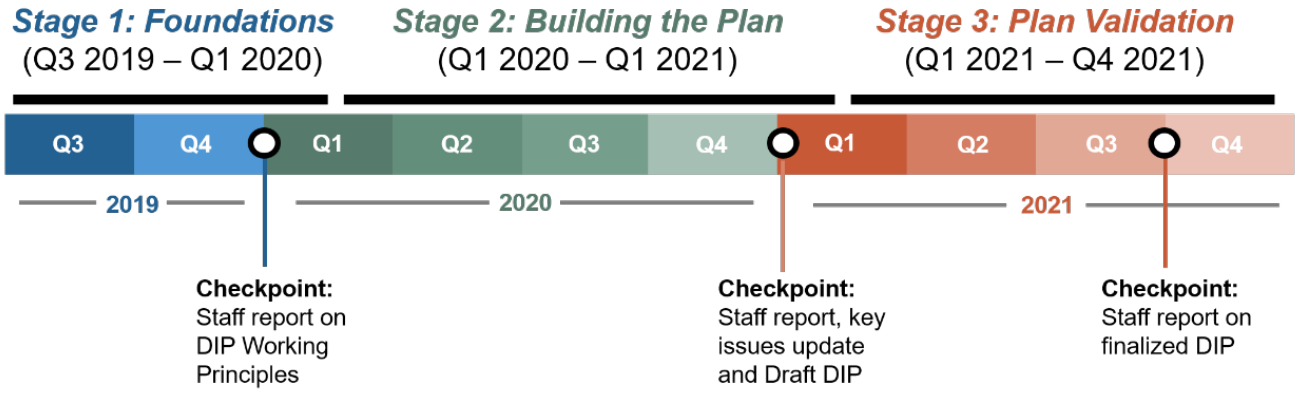
2. Digital Infrastructure Plan: Work Plan

Creating a Digital Infrastructure Plan (DIP) is a significant undertaking due to the scope of work and complexity of issues. Staff are in the process of implementing a two-year work plan to develop the DIP. The work plan has three main goals:

1. To work with the public, stakeholders and other community groups to build consensus and establish principles that will guide decision-making related to digital infrastructure in the City;

2. To provide clarity around how digital infrastructure should be used and governed, through the creation of new policies, and clarification of relationships between existing policies; and
3. To prepare a process for how internal and external digital infrastructure applications should be submitted and evaluated.

Project checkpoints to reach these goals are outlined below, and also illustrated in the following timeline:



Stage 1: Foundations

Q3 2019 - Q1 2020
- Project Launch
- Sign Declaration of Cities Coalition for Digital Rights
- Develop Working Principles
- Public and Stakeholder Consultation
- Initiate Data Governance research project
- Initiate consultation with City Divisions, ABCs and other government entities
- Collaborate with Intergovernmental Working Group

Checkpoint: Staff report on DIP Working Principles (January 2020)

Stage 2: Building the Plan

Q1 2020 – Q1 2021
- Consultations:
  - Community Advisory Group
  - Community and Stakeholder engagement
  - Consultation with City Divisions, ABCs and other government entities
  - International and Intergovernmental consultations
  - Develop new engagement and education materials
- Research
  - Complete data governance research
  - Focussed research on key issues and policy options
- Clarify scope of the Digital Infrastructure Plan and examine existing projects
- Develop draft DIP

- Update Working Principles based on further public engagement
- Create application and evaluation process
- Clarify internal City governance processes

Checkpoint: Staff Report, key issues update and Draft DIP (Early 2021)

Stage 3: Plan Validation

Q1 2021 – Q4 2021
- Consultations on Draft DIP with Public, City Divisions, ABCs and other government entities
- Continuation of research, policy development and proposal analysis
- Development of finalized DIP, including recommendations for implementation, performance monitoring and program evaluation

Checkpoint: Staff Report on finalized DIP (Late 2021)

The Digital Infrastructure Plan will continue to evolve and be managed as an ongoing foundational element to support the evolving digital and legislative landscape, City priorities, and emerging City issues.

Work Plan Update: Stage 1 - Foundations

This section of the report provides an outline of work that has been undertaken in Stage 1 of the Work Plan.

Cities Coalition for Digital Rights (CC4DR)

The ongoing process to address challenges related to digital infrastructure is not unique to Toronto. A number of cities have signed on to the Cities Coalition for Digital Rights (CC4DR) as a way to share best practices, learn from each other's challenges, and coordinate common initiatives and actions. In joining this coalition, cities sign a declaration and express commitment to the following principles:

1. Universal and equal access to the internet, and digital literacy
2. Privacy, data protection and security
3. Transparency, accountability, and non-discrimination of data, content and algorithms
4. Participatory democracy, diversity and inclusion
5. Open and ethical digital service standards

Following City Council's direction from June 2019, the City joined CC4DR on October 17, 2019. Membership in this coalition has provided staff with the opportunity to participate in collaborative webinars on related issues (e.g. Artificial Intelligence, Data principles), and to make connections with staff in cities including Amsterdam and London.

In addition to Toronto, nearly 40 other cities are now also part of this coalition. The coalition is also supported by United Cities and Local Governments (UCLG), which is described as the largest organization of local and regional governments in the world.

More information about the Declaration of Cities Coalition for Digital Rights is included in Attachment 3 and at the following website: https://citiesfordigitalrights.org/

Developing Digital Infrastructure Working Principles

The starting point to developing the DIP is to build consensus around a set of clear ethical principles that articulate a vision for the use of digital infrastructure in Toronto. Principles embedded within the DIP will guide future policy and implementation decisions related to the use of digital infrastructure. They will provide guidance when deciding if a proposed use of digital infrastructure is:

- necessary;
- complies with policies and regulations; and
- aligns with stated values.

In developing the draft principles, staff consulted with a range of divisions and considered the following resources:

- City of Toronto Corporate Strategic Plan
- Directions from City Council to ensure the following policy principles are reflected:
  - privacy, transparency, and accountability;
  - public ownership and protecting the public interest; and
  - equity and human rights.
- Other relevant City Council approved strategies
- Cities Coalition for Digital Rights principles (identified above)
- Principles developed by other governments and public organizations (Government of Canada, Government of Ontario, Waterfront Toronto's Draft Digital Principles)
- Research jurisdictional scan

Through this work, 5 draft principles for the DIP were developed. A vision statement was also developed for each principle. The draft principles were refined following the consultation process, described below. The refined principles are reflected in the recommendation section of this report, and are referred to as "Working Principles". It is important to note that there is no implied priority in the order in which the principles appear.

Public and Stakeholder Consultation

The first round of public consultation to inform development of the Digital Infrastructure Plan was held in December 2019. The primary purpose of this consultation was to obtain feedback on the proposed draft digital infrastructure principles. In advance of these consultations, staff created a subscription-based e-Bulletin and encouraged interested people to sign-up. To-date, there are 166 subscribers to this e-Bulletin.

Three separate public consultation sessions were held in December 2019. These consultation meetings were promoted through:

- The City's Get Involved website;
- The City's internet site (this included alerts on relevant websites);
- Online event postings (BlogTO and Now Magazine);

- The City's various corporate social media channels (Facebook, Instagram, LinkedIn, Twitter);
- Outreach to City Councillors;
- An email to the Toronto Aboriginal Support Services Council;
- An email to those who signed up for updates on the City's e-Updates webpage;
- A news release;
- Paid print media, which included city-wide (Toronto Sun) and neighbourhood circulation (translated to Cantonese, Mandarin, Tamil, Spanish, Tagalog, Italian, and Portuguese);
- Paid digital advertisements (Toronto.com, The Weather Network, CP24, Toronto Star); and
- Paid social media advertisements (Twitter, Facebook, Instagram).

To provide a variety of opportunities for participation, consultations were held in different geographic areas of the city (Scarborough, Downtown, and North York), at different times of the day including nighttime, and different days of the week including the weekend. One of the meetings was live streamed on the City's YouTube channel. To encourage participation of Toronto's First Nations, Metis and Inuit residents, the December 2019 consultations were promoted through outreach to Toronto's Aboriginal Support Services Council. Additionally, all consultation materials were posted to the project website, including the presentation, discussion guide, and feedback form. This enabled anyone unable to attend the meetings in person, or unable to view the livestream, to still participate. Poster board consultation materials are included in Attachment 4.

Approximately 195 individuals were directly engaged through the consultations held in December 2019. This included 75 individuals attending in person; and 120 individuals viewing the livestreamed consultation on December 9. An additional 100 individuals have viewed it since then. Participants in both meeting formats were encouraged to complete a questionnaire which was available in paper and digital format. Participants were able to provide feedback in this way from the start of the consultation process (December 7), through to a period of time 1-week after the final consultation meeting (December 19). A total of 54 completed questionnaires were submitted by the end of this process.10 unique emails with feedback were submitted to digitalfeedback@toronto.ca. Meeting attendees were also able to provide their comments by placing written post-it notes on display panels, and by speaking to City staff. These discussions were summarized by staff in written format for the project record.

In addition to public consultations, staff have been consulting with other City divisions and stakeholders including the City's Planning Review Panel, academia, the not-for-profit sector, and other organizations.

A summary report from this phase of consultations can be found in Attachment 5. As described in this consultation report, 5 recurring key messages emerged. These messages are listed below along with the City's planned actions in response:

a) Overall, participants expressed support for the Working Principles and indicated that the City was heading in the right direction.

   Response: Staff are recommending that City Council adopt these Working Principles and that they be applied to future digital infrastructure evaluations, in addition to existing policies, standards, and processes.

b) To improve the principles, participants noted that the terms within them could be simplified and/or explained, so that everyone is able to understand their meaning.

   Response: Minor modifications (described below) have been made to the Principles in response to public feedback. In the initial development of the Principles and in proposed changes, staff have endeavoured to strike a balance between the need for principles to be clear, simple and brief, while also addressing issues which may be technical and complex. Through the Stage 2 work program additional changes will be explored. In addition, staff will develop a Glossary of definitions for the various terms used in the Principles and in the DIP overall.

c) Participants expressed a desire to understand how the City plans to implement the Digital Infrastructure Plan (DIP) and realize the intent of the Working Principles. Related to this, participants asked how the success of the DIP will be monitored and evaluated over time.

   Response: Through Stage 2, the City will be further exploring key issues. The Draft DIP will articulate policies relating to the evaluation monitoring and implementation of digital infrastructure.

d) Participants indicated that the City should look to best practices from around the world and learn from others. They indicated that the DIP should exceed minimum requirements.

   Response: The City is looking at international practices through its participation in the Cities Coalition for Digital Rights and through targeted research such as the Data Governance research project (described further below). The City is also looking to best practices through its work with the Provincial and Federal governments and through engagement with other Ontario Municipalities and consultations with academics.

e) With respect to public engagement, participants noted the importance of engaging broadly and making the process accessible to all.

   Response: Stage 1 of the consultations are only the beginning of a growing engagement program. Additional consultations are planned for Stage 2.

Refinements of the Draft Principles to Working Principles

Through these combined initial consultations, four amendments to the principle vision statements presented during the 2019 consultations have been made:

- "interoperability" was added to the Equity and Inclusion vision statement. Interoperability is the property that allows for the unrestricted sharing of resources between different systems. This addition emphasizes the importance of maintaining flexibility, and avoiding the reliance on single vendor(s) to provide a service or platform.
- "Accessibility and Human Rights" was also added to the Equity and Inclusion vision statement to bring focus on these topics. Although human rights and accessibility are legislative and policy directives at the City, they often get missed or not thought about until the end of a process or plan.
- The words "privacy laws" were amended to "legislative requirements" in the Privacy and Security vision statement. This amendment more accurately references all regulations that apply to the City, including those which aren't necessarily regarded as "privacy laws" (for example, the City of Toronto Act).
- The word "must" in the Privacy and Security vision statement was amended to "will", so that each vision statement uses consistent terminology.

The above-noted amendments have been incorporated into the Working Principles and related vision statements within the recommendations section of this report. Consultations with the public, City Divisions, stakeholders, community groups and industry experts are ongoing and will continue further into 2020. The principles will continue to be referred as "Working Principles" until this phase of consultations is complete. Outcomes from this process will be included in the Stage 2 report, which is anticipated for early 2021.

Data Governance Research Project

In light of emerging discussions around data governance, the June 2019 report to Executive Committee introduced the creation of a "research project examining international best practices for data governance models, such as data trusts, and potential applications within the Toronto context". This research project was initiated in September 2019 and is ongoing. This project is examining approximately 20 international case studies to determine best practices and potential directions for the Toronto context. The First Nations Data Centre operated by the First Nations Information Governance Centre is one of the structures being explored in this research project.

Next Steps

Staff will continue with Work Plan Stage 2: Building the Plan, in 2020. A detailed view of this work plan stage is attached as Attachment 1. As the Digital Infrastructure Plan (DIP) evolves, it will be designed to reflect changes in technology and regulations, and feedback that is provided through the consultation channels. Should any digital infrastructure proposal be submitted prior to such time as the DIP has been endorsed by City Council, staff will apply the Working Principles in addition to existing policies, standards, and processes, in its evaluation.

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SIGNATURE

Lawrence Eta, Chief Technology Officer

ATTACHMENTS

Attachment 1: Proposed Work Plan Stage 2, Building the Plan
Attachment 2: Intergovernmental context
Attachment 3: Declaration of Cities Coalition for Digital Rights
Attachment 4: Poster board consultation materials
Attachment 5: Consultation Report