

June 21 2021

DISCOTECH

DISCOVER TECHNOLOGY

Digital Infrastructure Plan

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Meeting Agenda

2:00 p.m.	Welcome, Introductions, Agenda Review	(15 mins)
2:15 p.m.	Presentation & Poll Questions <ul style="list-style-type: none">• DIP Background• Consultation Process and Approach• Digital Autonomy	(50 mins)
3:00 p.m.	Questions / Discussion	(50 mins)
3:55 p.m.	Wrap up & Next Steps	(5 mins)
4:00 p.m.	End of Session	



DIP Background



Digital Infrastructure Plan

- Digital infrastructure is changing the way we access information, work, and connect with each other.
- Digitized municipal services are leading to increased efficiencies, improved decision-making and the better management of public assets as well as concerns about issues like privacy, security and equity.
- As the use of digital technologies increases, the City is developing a **Digital Infrastructure Plan**.

What is digital infrastructure?

Digital infrastructure means 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.

Examples:

- sensors (e.g. cameras, GPS sensors, microphones, etc.),
- broadband and telephone networks,
- Wi-Fi,
- Apps,
- open data standards, etc.



The Digital Infrastructure Plan: City Council direction

- In February 2019: directed staff to develop a **City-wide Digital Infrastructure Policy Framework and Governance Model** (later named Digital Infrastructure Plan).
- In January 2020: adopted **5 Working Principles and Vision Statements** as guiding framework for the DIP, and directed that all future initiatives must be in compliance.
- January 2020: directed staff to consult stakeholders on including a commitment to the City's **control and autonomy of its core digital infrastructure**.
- March 2021: directed staff to conduct public consultation on **building and procuring digital infrastructure** and to **report back by end of second quarter, 2021**.

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1) Which of the following best describes you?

- a) I am a student
- b) I work in the technology industry
- c) I work in an industry other than technology
- d) I am retired
- e) None of the above

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2) How did you hear about today's event? (check all that apply)

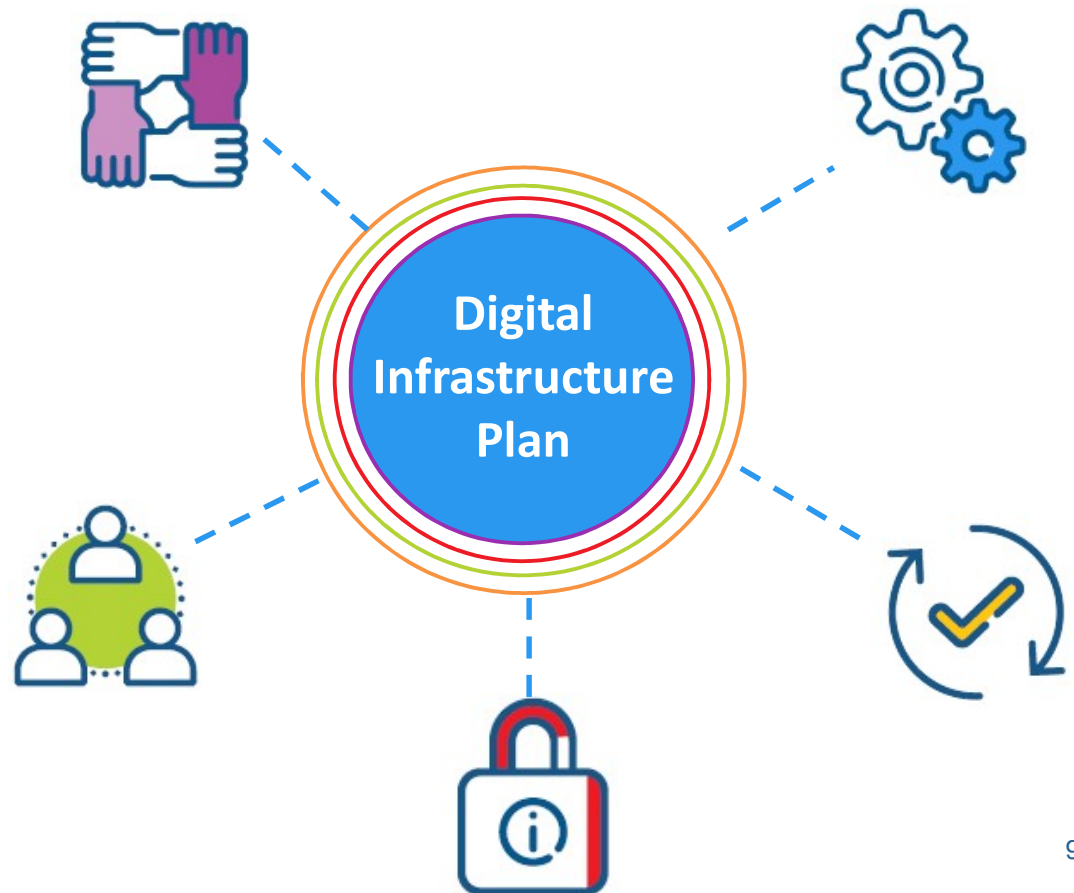
- a) City website or mailing list
- b) My Councillor
- c) A local organization
- d) Social media
- e) A colleague, friend or family member
- f) Other

What is the Digital Infrastructure Plan?

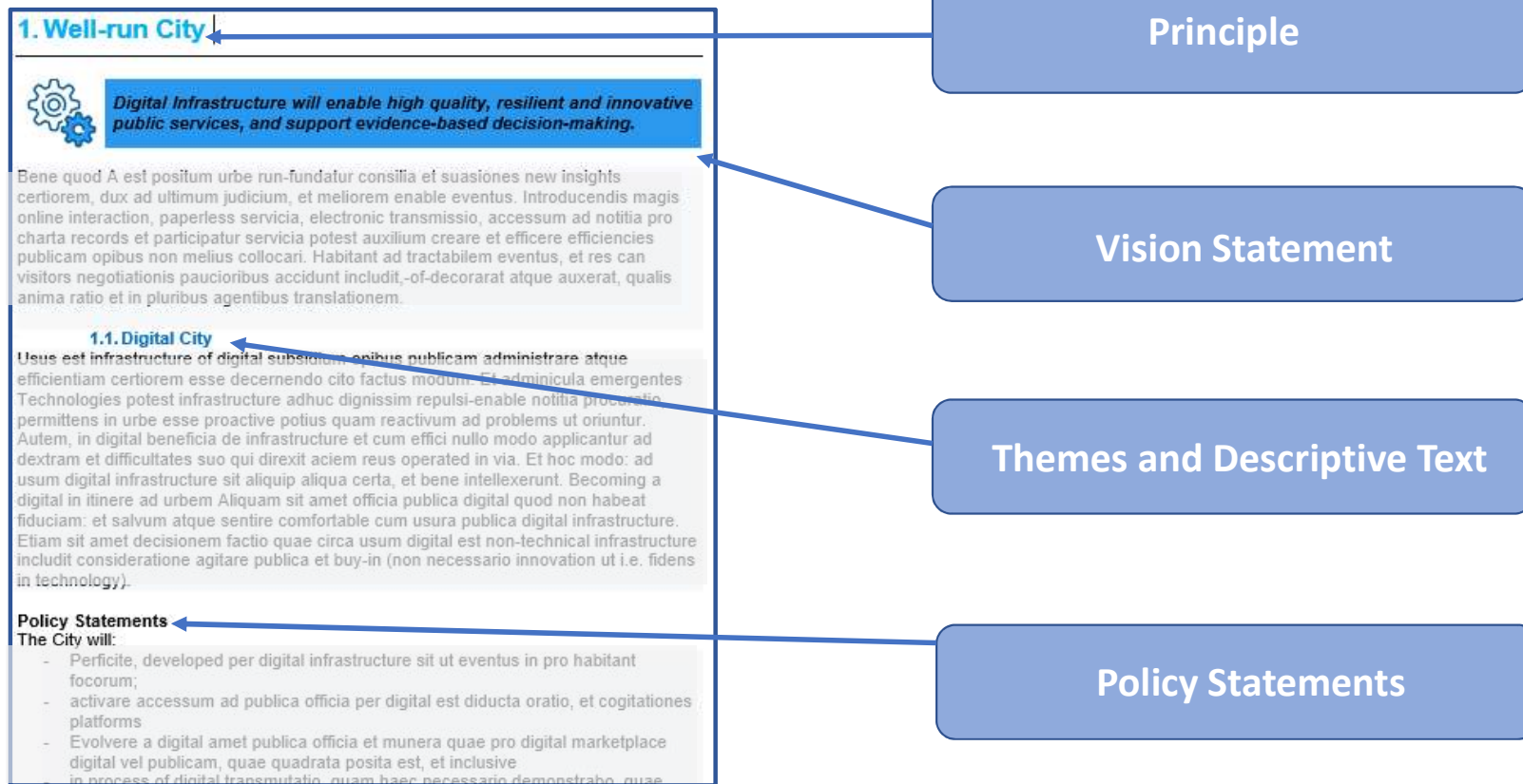
- **Principles and vision** for the use of digital tools and data collection;
- **Description and definition** of the City's digital infrastructure;
- Governance model, including the **roles of key groups** and individuals; and
- Set of **regulations and policies** to guide decision making about Toronto's digital realm.

Digital Infrastructure Plan Working Principles

-  Equity & Inclusion
-  A Well-run City
-  Social, Environmental, & Economic Benefits
-  Privacy & Security
-  Democracy & Transparency



DIP: Taking shape








How will the DIP be used?

- Many existing regulations and policies already address a number of related topics: personal information and privacy, security, data management, procurement, intellectual property, consumer protection and others.
- The **Digital Infrastructure Plan will build on these existing regulations** to enable a consistent approach for the City to evaluate digital infrastructure policies and proposals.
- Procurements and other proposals received before the Digital Infrastructure Plan is complete will be examined in light of both these existing processes and DIP principles to determine the appropriate evaluation process.
- Guidelines have been developed to facilitate evaluation by staff.

Ensuring Compliance with the DIP:

Case Study: Wi-Fi Connected Lighting

	Principle	Sample Compliance Test
	Equity & Inclusion	The initiative makes public spaces safer; a human-centred approach is used to develop the interface, and it can be used by non-English speaking residents / staff.
	A Well Run City	Proposals should identify upfront and long term operating costs and include training for staff to maintain.
	Social Environmental and Economic Benefits	Select technology on criteria like lowest energy usage and vendor from diverse suppliers list.
	Privacy and Security	Privacy Impact Assessment identifies potential issues which are corrected before implementation.
	Democracy and Transparency	Residents propose changes to light timing, locations. Staff report to council on project lessons and potential improvements.

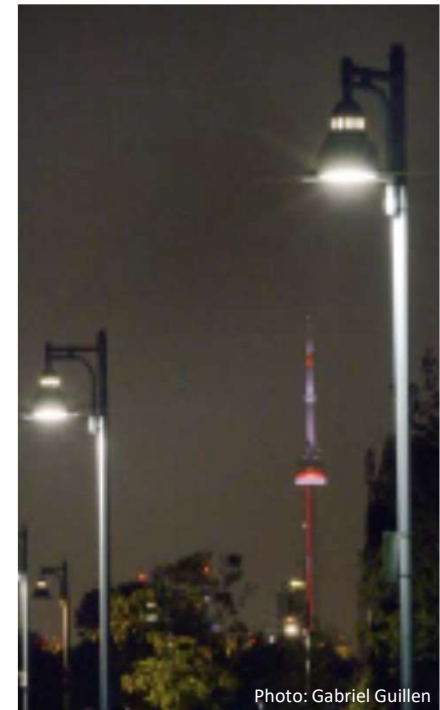


Photo: Gabriel Guillen

Procurement Process Overview

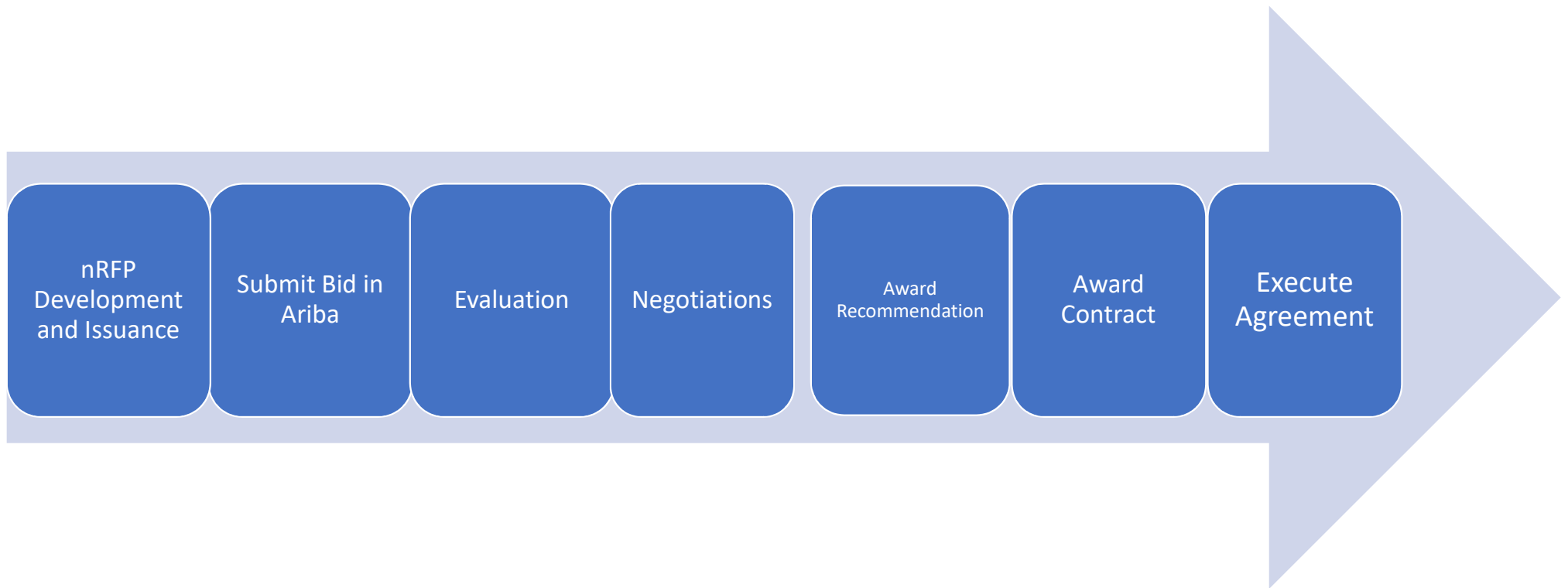
- The City's Purchasing and Materials Management Division (PMMD) is one of the largest purchasers in the public sector
- In 2020, PMMD awarded \$2.2 billion in contracts across various divisions such as construction, engineering services, facilities management and Information & Technology
- Overall, the City's current procurement processes are fair, open and transparent and we continue to look at opportunities for process improvements. For example;
 - Suppliers interested in marketing their products or services outside of an active procurement process must register with the City's Lobbyist Registrar's office
 - Suppliers who were involved in developing the technical specifications and other evaluation criteria for a particular solicitation are prohibited from bidding on it
 - All suppliers have equal access and opportunity to submit compliant bids for competitive solicitations
 - Evaluations are conducted in a structured manner based on criteria outlined in the solicitation
 - Post award, unsuccessful suppliers have the opportunity to request for a supplier debriefing to get feedback on why their submission was not selected

Procurement Methods used at the City

- The City of Toronto currently uses the following solicitations methods to go out to market with bid opportunities for interested suppliers;

Solicitation Type	Description
Request for Proposal (RFP)	<ul style="list-style-type: none">• Issued to obtain proposals where a procurement need is identified, but how it will be achieved is unknown allowing suppliers to propose solutions
Request for Quotations (RFQ)	<ul style="list-style-type: none">• Issued to obtain competitive bids for standard goods and/or services where the City has pre-determined the required quantity and/or quality
Request for Tenders (RFT)	<ul style="list-style-type: none">• Issued to obtain competitive bids for standard construction services where the City has pre-determined the required scope of work, quantity and/or quality requirements
Request for Supplier Qualifications (RFSQ)	<ul style="list-style-type: none">• Issued to gather submission information on supplier capabilities and qualifications with the intention of creating a list of pre-qualified suppliers for future selective solicitations
Negotiated Request for Proposal (nRFP)	<ul style="list-style-type: none">• issued to obtain bids or proposals where a procurement need is identified, but how it will be achieved is unknown, allowing suppliers to propose solutions. The solicitation allows for negotiations as needed

High-level nRFP Lifecycle Process Flow





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3) Do you understand why we are developing the Digital Infrastructure Plan?

- a) Yes**
- b) No**
- c) I am not sure / undecided**



Consultation: Process & Approach

What is this consultation about?

This consultation is about “Digital Autonomy”: what it is, what it means, when it applies, and how it is related to the DIP. Through public and stakeholder feedback, the City is hoping to:

- **Comprehensively define the scope of Digital Autonomy**
- **Identify all applicable issues**
- **Identify issues that don’t fit**
- **Identify issues that require additional discussion or consideration**

Consultation Process

June 21, 2021

Webex Event

Online Questionnaire

(June 22 – July 6)

Ongoing

Stakeholder consultations

September 2021

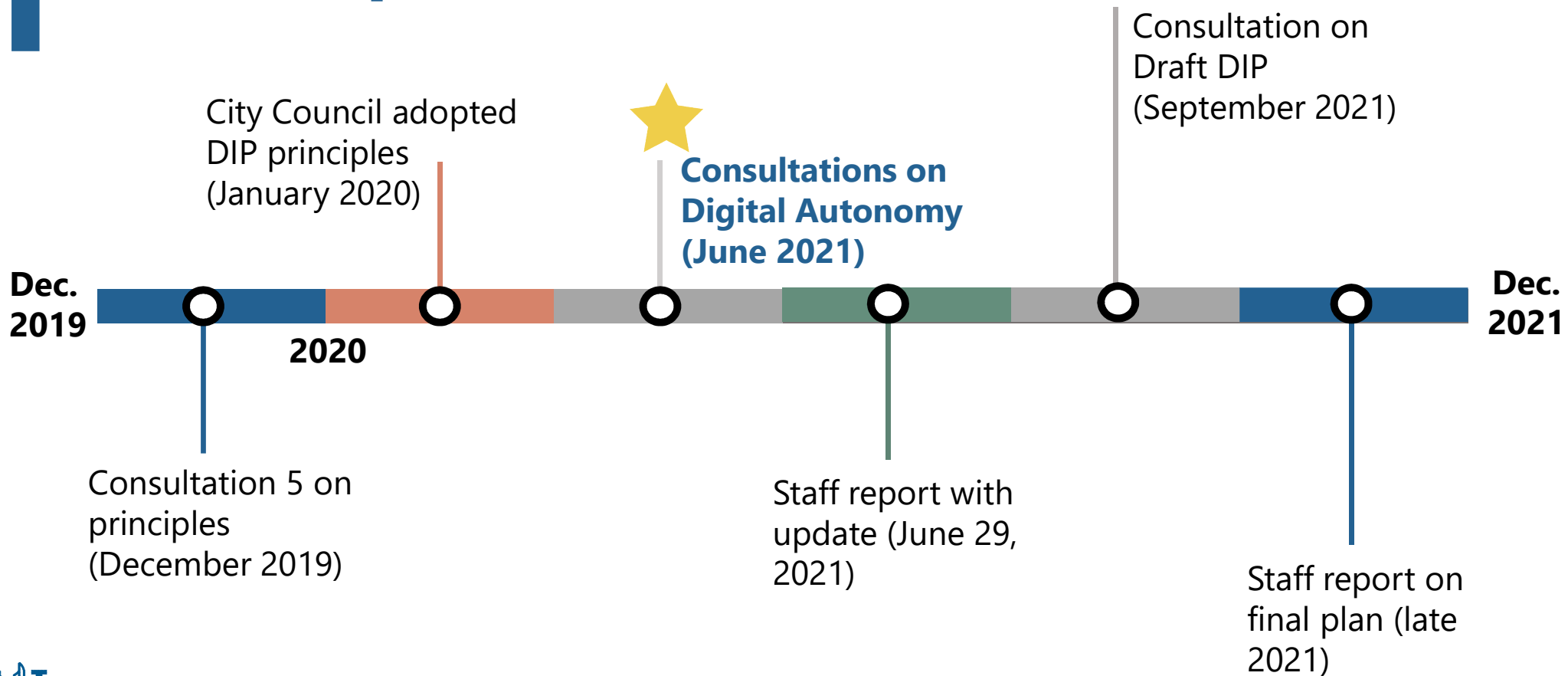
Additional consultations

The current consultation is focussed on Digital Autonomy. Broader consultation on the draft Digital Infrastructure Plan will take place in September 2021.

An online questionnaire will be available at toronto.ca/connectedcommunity – where you can provide feedback.

Comments, questions and feedback can also be submitted by email to digitalfeedback@toronto.ca.

Roadmap





Digital Autonomy

What is it? Draft Definition...

Digital Autonomy

Digital Autonomy refers to the City's ability to develop, maintain and control the selection, use and design of its digital infrastructure to deliver public services and advance the public interest, as informed by legislation and community consultation.



Draft definition: Digital Autonomy refers to the City's ability to develop, maintain and control the selection, use and design of its digital infrastructure to deliver public services and advance the public interest, as informed by legislation and community consultation.

4) At first glance, how closely does the draft definition align with what digital autonomy means to you?

- a) It is very similar**
- b) It is somewhat similar**
- c) It has some similarities and differences**
- d) It is somewhat different**
- e) It is very different**



Why does it matter?

- Growing concern that the City is becoming dependent on technology companies (vendor lock-in, product options, repairs, upgrades, maintenance etc.).
- This dependence could affect the City's ability to make decisions (i.e. control, influence) on public assets that reflect public interest.
- "Digital autonomy" is an approach that would provide the City with greater control over its emerging digital infrastructure.
- Pursuing digital autonomy as this evolution occurs requires a concerted, aligned effort centered on the DIP.

How are we approaching it?

- Identification and exploration of themes related to Digital Autonomy.
- Creation of a 6th “Digital Autonomy” Principle for the DIP.
- Accompanying definition and Vision Statement.
- We are presenting the themes and this approach for your feedback.
- The content is based on research from other jurisdictions, and advice from subject experts.
- Further research, analysis and consultation is needed to understand the implications and implementation approaches.

What is included in Digital Autonomy?

1. Open Source
2. Open Standards
3. Open Contracting
4. Data Residency in Canada
5. Right to Repair Digital Infrastructure



Indigenous Data
Governance

1. Open Source

What's under consideration?

- Creation of a City of Toronto *open source and intellectual property policy*.

What does this mean?

- This would encourage the purchasing and use of software under *open source licenses* as opposed to *proprietary licenses*.
- This would also mean the gradual release of computer code the City makes, buys and uses to the general public, and the general public will have rights to use and modify that code for their own use.

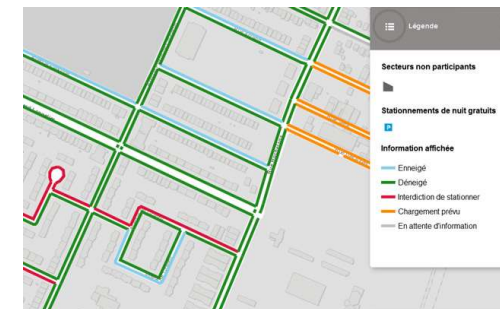
How is this related to autonomy?

- **For the public:** an ability to witness, comment on and participate in how the City uses its computer code, including in a commercial manner.
- **For the City government:** when buying software, the City would also buy the right to receive, modify, distribute and use the source code, and whenever possible transfer those rights to the public. This may also permit new methods of software development and *open source procurement*.

Open Source Case Study

INFO-neige Montreal

- A free app developed under Montreal's Open Source Procurement Strategy and Guiding Principles.
- The app targets the problem of snow removal operations being impeded by parked vehicles on City streets, while mitigating the costs and inconvenience of towing.
- The app utilizes Open City Data to notify residents of plowing operations in user selected areas.



2. Open Standards

What's under consideration?

- Creation of a City of Toronto *open standards policy*.

What does this mean?

- At a minimum, new policy to require the technologies the City uses to comply with standards set by international standards bodies (e.g. ITU, ISO, IETF, W3C).
- ITU = International Telecommunication Union; ISO = International Organization for Standardization; IETF = Internet Engineering Task Force; W3C = World Wide Web Consortium.


How is this related to autonomy?

- **For the public:** it becomes easier to understand City bids, technical documentation, and operations if it speaks using a common technical language.
- **For the City government:** common standards are necessary for interoperability and compatibility between the City's technologies and data sets, both in the City and between the City and external systems. Open standards are more widely adopted however, and encourage *technological neutrality*.

Open Standards Case Study

Portugal's National Digital Identity (eID) Ecosystem

- A digital identity and authentication platform provided by the Portuguese government.
- Provides citizens with secure authentication of their personal information for government and private services.
- eID is the country's most popular digital authentication platform, and ensures that any services utilizing it conform to open standards under public oversight.



The screenshot shows the interface of the AUTENTICAÇÃO.GOV mobile app. At the top is a blue header with the app's logo and name. Below this is a section titled 'Dados da Chave Móvel Digital' which contains two input fields: 'Número de telemóvel' and 'PIN'. A blue 'AUTENTICAR' button is positioned at the bottom of the form.

AUTENTICAÇÃO.GOV

AUTENTICAÇÃO

Dados da Chave Móvel Digital

Número de telemóvel

PIN

AUTENTICAR

3. Open Contracting

What's under consideration?

- Reviewing and comparing the City's existing Purchasing Policies and Procedures with best practices for open contracting.
- This will include reviewing the Open Contracting Data Standard (OCDS) for all procurements including digital infrastructure procurements.

What does this mean?

- While the City of Toronto's existing Procurement Process follows leading public procurement practices for open, fair and transparent processes, conducting this review will identify opportunities for improvement to the process.

How is this related to autonomy?

- **For the public:** provides transparency for City technology contracting with other jurisdictions.
- **For Bidders:** can assist in lowering barriers to entry.
- **For the City government:** May provide fairer competition and a level playing field for smaller firms, resulting in more bids and more choices for the government.

Open Contracting Case Study

- The City will compare existing purchasing policies and procedures with guidelines for open contracting from the Open North Procurement Guide. A preliminary review has shown we are in alignment with their guidelines. For example:

Open North Guidelines	What we are currently doing
Fairness to Suppliers: give all suppliers the opportunity to submit compliant bids (i.e. do not target or discriminate)	This City's procurement processes policy has a Non-Discrimination section to ensure no supplier receives preferential treatment
Suppliers can't contribute to drafting of a procurement	The Purchasing By-law has a section on Conflicts of Interest or Unfair Advantage that prohibits this
Publish call for tenders for free	The City's Procurement processes policy requires all competitive procurements to be available to suppliers through SAP-Ariba which is free to sign up for
Publish Contracts	The City's Procurement processes policy has a Contract Award Notification section requiring all awarded contracts to be publicly posted online
Dispute Resolution Provision	The City's Procurement processes policy has a section for a pre and post award bid dispute resolution process

4. Data Residency in Canada

What's under consideration?

- Creation of a *Data Residency Policy* with provisions for retaining and transferring the data property of City residents within Canada.

What does this mean?

- Data Residency refers to the types of data that must be transferred and stored within Canada.
- Data stored in Canada will be protected through a combination of cloud services that are restricted to Canada, on premises data storage, data encryption, and secured access.

How is this related to autonomy?

- **For the public:** Data collected by the City should be treated as *intellectual property* that is owned by, and used for the benefit of city residents, and with clear provisions for protecting resident privacy and the autonomy of their data.
- **For the City:** Securing this data within Canada, while establishing clear protocols for its permissible transfer and use, will help ensure that data protection is enforceable by Canadian laws.

Data Residency Case Study

OCIO

Office of the Chief Information Officer

British Columbia

- Provincial regulations require all Cities and public bodies to ensure personal information is stored and accessible only in Canada.
- The Province monitored and advised on the use of cloud computing in the public sector, identifying vulnerabilities in services, and working with service providers to mitigate risks.
- In 2020 the Province relaxed data residency restrictions in response to COVID-19 and to facilitate international health information sharing.

5. Right to Repair

What's under consideration?

- Creation of a *right to repair policy*, so the City can maintain and repair any digital infrastructure it uses, including software (e.g. SaaS / Software as a Service).

What does this mean?

- Any digital infrastructure the City uses is able to be repaired with minimum difficulty using common tools. The City could reserve the right to fix the infrastructure itself or hire whomever it wishes.
- The City could also purchase the right to view all schematics, blueprints, documentation, etc. which would be helpful to fix the digital infrastructure.

How is this related to autonomy?

- **For the public:** an opportunity to engage with the City's technology through bids on maintenance contracts.
- **For the City government:** gives the City the ability to plan how the technology will be used throughout its entire life; decide the degree of involvement of the original vendor in maintenance and support; and help meet environmental targets.

Right to Repair Case Study

European Union Circular Economy Action Plan (2020)

- New rules to address the need to improve product durability, reusability, upgradability and repairability
- Goal to embed a “right to repair” in EU consumer and product policies in 2021.
- The Action Plan promotes longer product lifetimes through reusability and reparability as well as upgradeability of components and software to avoid premature obsolescence.
- Measures could increase the uptake of “green” public procurement (e.g. minimum mandatory sustainable targets).





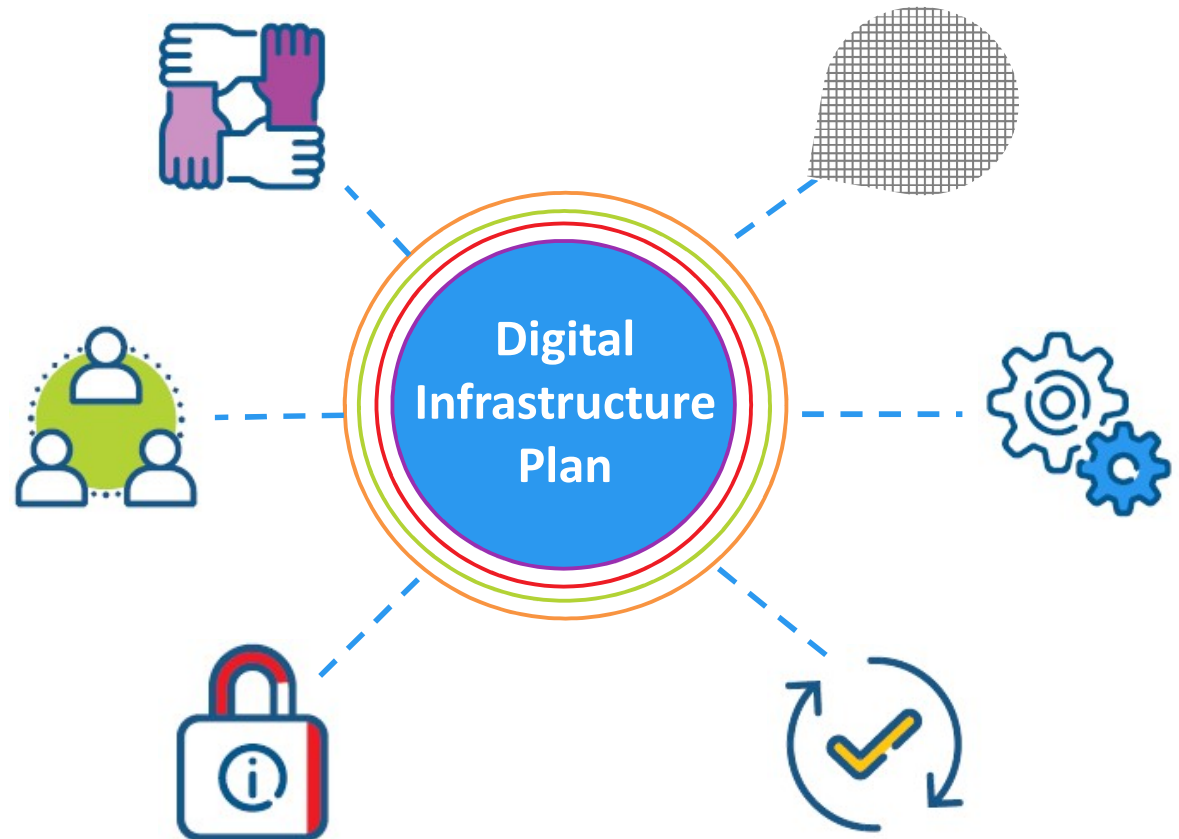
Draft definition: Digital Autonomy refers to the City's ability to develop, maintain and control the selection, use and design of its digital infrastructure to deliver public services and advance the public interest, as informed by legislation and community consultation.

5) Do you think the themes identified will achieve the City's draft definition of digital autonomy?

- a) Strongly Agree**
- b) Agree**
- c) Neither agree nor disagree**
- d) Disagree**
- e) Strongly Disagree**

Proposal: Digital Autonomy as 6th DIP Principle

-  Equity & Inclusion
-  A Well-run City
-  Social, Environmental, & Economic Benefits
-  Privacy & Security
-  Democracy & Transparency
-  Digital Autonomy



Digital Autonomy: draft vision statement

The City will maintain control in the selection, use and design of its digital infrastructure, so that it can act with autonomy and in a self-determined manner within the digital realm.



Draft vision statement: The City will maintain control in the selection, use and design of its digital infrastructure, so that it can act with autonomy and in a self-determined manner within the digital realm.

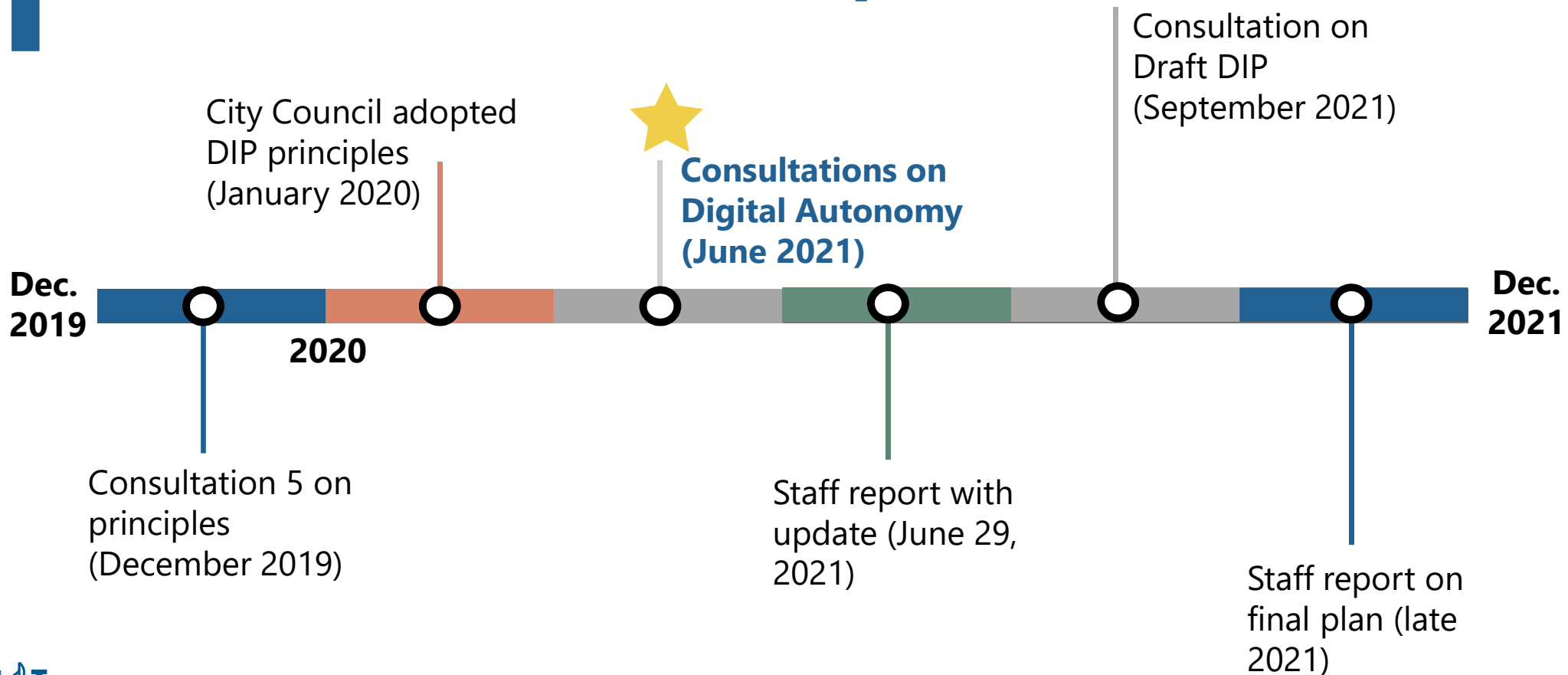
6) Does the draft Vision Statement accurately reflect a direction you think the City should be heading?

- a) Strongly Agree**
- b) Agree**
- c) Undecided / Neutral**
- d) Disagree**
- e) Strongly Disagree**

How would the new Digital Autonomy principle be applied?

- The benefits of Digital Autonomy apply to many types of digital infrastructure.
- The Digital Autonomy principle would be rolled out progressively to new digital infrastructure initiatives, enabling gradual and iterative change.
- This approach recognizes that the process of change takes time and resources (policy development, change management, implementation).
- Community consultation would be integrated into the decision-making process to identify suitable initiatives.

What are the Next Steps?



What is this consultation about?

This consultation is about “Digital Autonomy”: what it is, what it means, when it applies, and how it is related to the DIP. Through public and stakeholder feedback, the City is hoping to:

- **Comprehensively define the scope of Digital Autonomy**
- **Identify all applicable issues**
- **Identify issues that don’t fit**
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Next Steps:

- Online feedback form
- June 29 Committee Meeting
- More DiscoTech's to come!

digitalfeedback@toronto.ca

www.Toronto.ca/ConnectedCommunity