Digital Infrastructure Plan

FALL 2021 ENGAGEMENT SUMMARY REPORT

DECEMBER 2021

Prepared by LURA Consulting for the City of Toronto

TORONTO

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Executive Summary

The use of digital infrastructure is one of many tools to help the City of Toronto 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.

In September 2021, the City of Toronto presented its draft Digital Infrastructure Plan for public and stakeholder review and comment. In total, 376 individuals participated in consultations events including public meetings, an online questionnaire, the Community Advisory Group (CAG), drop-in sessions with the project team, stakeholder meetings, and submissions by email and phone. During these consultation sessions, participants were asked to provide feedback on the DIP, including the plan's six principles and policy statements within.

Overall Feedback

- Overall participants supported the DIP, and the six principles and policy areas within, but expressed a range of preferences for the prioritization of principles and policy areas.
- Participants discussed that the definition of digital infrastructure should be expanded to include digital automation and emerging digital applications.
- Participants indicated that the DIP should be transparent about aspirational goals that may not be achieved or will take time to achieve as well as competing goals that could limit implementation.
- Participants emphasized the importance of ongoing public education on the DIP, including on how systemic bias in technology will be addressed, and how privacy will be protected.
- Participants identified affordable internet access and digital literacy as foundational elements of digital transformation and inclusion.
- Participants discussed that more details on how to interpret the DIP, as well as internal capacity development are needed for implementation.
- Participants emphasized the importance of including an accountability framework and measures for DIP implementation.
- Participants emphasized the importance of removing barriers for local technology companies, the civic technology community, and nonprofits to participate in DIP implementation and procurement processes.
- Participants indicated that the City should collaborate and align with other governments on implementing DIP policies.
- Participants recommended that supporting reconciliation with Indigenous People be included as a unique principle that is separate to the Equity and Inclusion principle.

Principle 1 - Equity and Inclusion

- Participants envisioned equity as a collective effort with equity-deserving groups providing meaningful guidance to the implementation of the DIP as an ongoing process.
- Participants described the importance of internet access to receive City services, and the need for an equity lens.

- Participants noted that accessible digital infrastructure will play a crucial role and highlighted the importance of complying with the Accessibility for Ontarians with Disabilities Act.
- Participants indicated that digital infrastructure should be responsive to the end user, by consulting with these users at the beginning of the design process, and ensuring various users groups such as people with disabilities and individuals with lower digital literacy are engaged directly in user testing.
- Participants suggested that alternatives to technology should be available for individuals who wish to navigate non-digital service channels.

Principle 2 - Well-run City

- Participants noted that well-run digital infrastructure would benefit from opportunities for ongoing feedback on digital infrastructure to evaluate and continually improve upon website user experience and functionality.
- Participants emphasized the importance of data governance and that guidelines for the architecture of data account for expandability and scalability.
- Participants indicated that sensor data should be open, transparent, and accessible in real time.

Principle 3 - Social, Economic, and Environmental Benefits

- Participants discussed the importance of public control as a key method of delivering social benefit.
- Participants discussed creating opportunities and bottom-up initiatives for local and domestic technology companies to broaden relationships with the City.
- It was recommended that policies should reduce the administrative burden and level of effort required for small firms to participate in the procurement process.
- Participants discussed the importance of a lifecycle analysis of environmental impact and energy-use when evaluating digital infrastructure.

Principle 4 - Privacy and Security

- Participants expressed concerns that this principle is not sufficiently visionary and recommended that the policies be strengthened to exceed legislative requirements.
- Participants indicated security should be approached with a user-centered focus.
- Participants suggested a participatory process be included that allows for public input in weighing privacy risks against technology benefits, as opposed to an over reliance on Privacy Impact Assessments.
- Participants noted that the City should clearly articulate what it means for individuals to provide consent to the use of their data, including de-identifying certain datasets and indicating which divisions and agencies have access to data.
- Participants expressed concerns with the practice of requiring a digital user identification associated with personal information.

Principle 5 - Democracy and Transparency

- Participants expressed desire for broader resident participation in the City's democratic process through digital infrastructure.
- Participants emphasized the importance of seeking feedback from end-users through targeted outreach and research to understand needs and evaluate utility.

- Participants were interested in a registry of City software.
- Participants were interested in how open contracting policies would be translated into specific procurement processes.
- Participants expressed concerns due to a lack of information about how the collection of identifying data would be used, and who it would be shared with. They also cautioned against sharing data with data brokers or other actors who may seek to exploit data for commercial purposes.

Principle 6 - Digital Autonomy

- Participants expressed support for the Open Source Software policy area, and in particular, policies that enable City staff, community organizations and members of the public to collaborate on open source software.
- Participants expressed concerns that the City will have difficulty achieving this principle without significant investment in updating its internal IT management capabilities.
- Participants recommended that the City use open licensing and align policies with ISO standards so that new barriers to innovators are limited.
- Participants expressed concerns that data residency policies will stifle innovation.
- Participants indicated support for right-to-repair policies and indicated that more details should be shared regarding requirements for vendors.
- Participants suggested that resident control and group control should be acknowledged.

Detailed feedback on what we heard on each of the six principles is documented in the report body.

Section 1: Project Overview

The use of digital infrastructure is one of many tools to help the City of Toronto 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.

Digital Infrastructure is defined as: *infrastructure that creates, exchanges or uses data or information as 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.

Engagement Purpose and Objectives

This round of public consultation for this project was intended to solicit feedback on the draft DIP prior to its presentation to Council at Executive Committee in early 2022. Through this consultation, the City hoped to understand:

- Overall thoughts on the DIP, including each of the Principles that form the foundation of the DIP;
- Level of support for the policy statements within each Principle's series of policy areas;
- What people liked and disliked about each policy area, and if they would add anything to it; and,
- Any additional advice people had to offer the City.

Project Timeline

The DIP has been developed over the past two years and has been informed by three rounds of stakeholder and public consultations. The timing for the development of the DIP is illustrated in Figure 1.

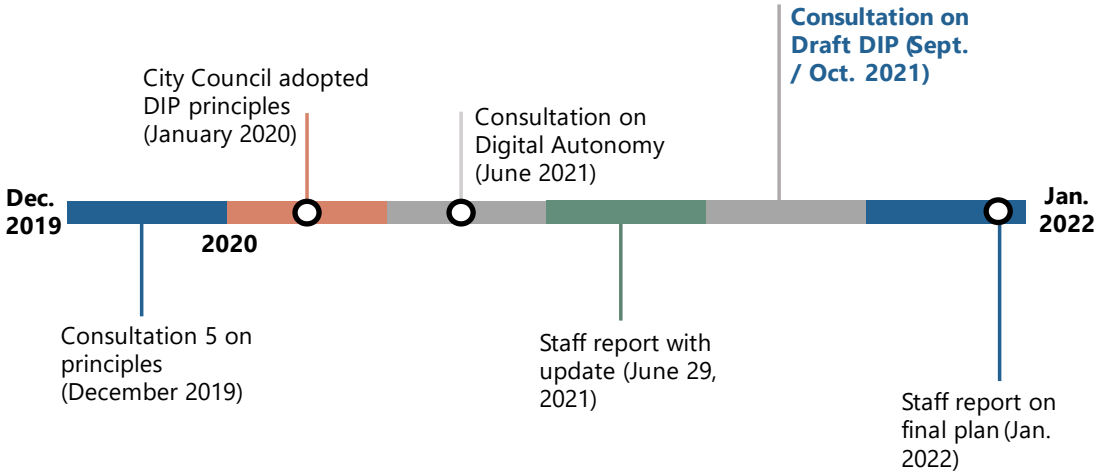

Figure 1: DIP Development and Consultation Timeline

Report Contents

This engagement summary report documents the results of two public meetings and the online questionnaire that comprised the engagement process. It highlights the engagement methods used to gather public input and includes an analysis of the feedback received. These key messages, as described in this report, will be reviewed and considered by the project team and will inform revisions to the Digital Infrastructure Plan.

Section 2: Engagement and Communication Methods

Engagement Methods

The engagement methods used to seek feedback from members of the public include the following:

- Two virtual public meetings;
- An online questionnaire hosted on Ethelo;
- Two virtual Community Advisory Group meetings;
- Three drop-in sessions with project team members;
- Nine stakeholder presentations and meetings;
- A meeting with Toronto Aboriginal Affairs Advisory Committee; and,
- Email submissions and phone conversations with people that preferred to speak with the project team.

The following section explains each in further detail below.

Virtual public meetings

On September 28 and September 29, 2021, the City of Toronto held virtual public meetings through WebEx. Each public meeting began with a presentation from City staff, followed by a facilitated question and answer period. The City provided a phone-in option that allowed participants to listen and ask questions by phone. The presentation included:

- An overview of the DIP project background;
- An overview of the DIP content and example case studies; and,
- An overview of the public consultation process and feedback opportunities.

A non-verbatim summary of the Q&A sessions can be found in **Appendix A.** The virtual meetings were attended by 133 people.

Online questionnaire

Public feedback was gathered through an online questionnaire hosted on the project's online feedback platform. This platform enabled participants to engage with other participants' feedback through public discussion threads. The questionnaire asked for public feedback on:

- The vision statement and description of each DIP principle;
- The policy areas and policy statements within each DIP principle; and,
- Advice on the implementation of the DIP.

The online questionnaire was made available from September 28, 2021 to October 19, 2021. The questionnaire had a total of 49 respondents. **Appendix B** shows a summary of the questionnaire results.

DIP Community Advisory Group meetings

On September 14 and November 1, 2021, the project team held virtual meetings with the DIP Community Advisory Group (CAG) through WebEx.

On September 14, 2021, the project team delivered presentations to the CAG on the DIP content and the DIP consultation process, followed by Q&A periods and breakout group discussions where CAG members provided feedback on the public consultation process and the policy approaches for specific DIP principles.

On November 1, 2021, the project team provided presentations to the CAG on considerations for a future DIP Public Advisory Board (PAB) on DIP implementation and feedback received from the public consultations, followed by Q&A periods and group discussions where CAG members provided feedback on considerations for the PAB and how the City of Toronto can respond to the public feedback received.

A summary of the two DIP CAG meetings can be found in **Appendix C**.

Drop-in sessions

The City of Toronto held three drop-in sessions where interested members of the public could speak directly with the project team to ask more in-depth questions related to the DIP. The drop-in sessions were held through WebEx. Each of the three drop-in sections focused on a different set of DIP principles and corresponding policy approaches, as follows:

- October 4, 2021 - Digital Autonomy and Privacy & Security
- October 6, 2021 – Democracy & Transparency and Well-run City
- October 13, 2021 – Equity & Inclusion and Social, Economic and Environmental Benefits

The drop-in sessions were attended by a total of 15 participants. A summary of the feedback received from the drop-in sessions can be found in **Appendix D**.

Community Partner and Stakeholder presentations and meetings

The project team conducted presentations and meetings with the following community partner and stakeholder groups during the consultation period:

1. Toronto Accessibility Advisory Committee
2. Anti-Black Racism Advisory Committee
3. Two-Spirt, Lesbian, Gay, Bisexual and Queer Advisory Committee
4. TECHNATION
5. Civic Tech Toronto
6. Cities Coalition for Digital Rights
7. Toronto Youth Cabinet
8. Connected Canadians
9. AI in Municipal Government Community of Practice

The presentations and meetings with community partner and stakeholder groups were attended by a total of 148 participants. A summary of feedback received from the stakeholder presentations and meetings can be found in **Appendix E**.

Toronto Aboriginal Affairs Advisory Committee meeting

On October 22, 2021, the project team met with the Toronto Aboriginal Affairs Advisory Committee and delivered a presentation on the DIP. A summary of feedback received from the Toronto Aboriginal Affairs Advisory Committee can be found in **Appendix F**.

Email submissions and phone feedback

Several people chose to email their feedback to the City, or share their feedback over the phone. Emailed feedback can be found in **Appendix G**. Feedback received via phone call can be found in **Appendix H**.

Communications Methods

The communications methods used to share information with the community and stakeholders included:

- The DIP project webpage;
- The DIP online feedback platform;
- Emails to e-bulletin subscribers;
- The City of Toronto's social media accounts; and,
- Community outreach.

Communications methods are explained in further detail below.

Project webpage

The DIP project webpage is a communications portal to inform the public about the project. This webpage hosts all information on the project including background information on the DIP, a link to the draft DIP, information on how to participate in the public consultations, contact details for the project team (phone and email), previous consultation materials, and an option to subscribe for the DIP email list.

Online feedback platform

The DIP online feedback platform served as the project's online community engagement hub. The platform allowed for members of the public to read the draft DIP content and access relevant background information such as an explainer video, definitions of key terms, and case studies of the DIP in action. The public had the opportunity to provide their feedback through voting and sharing comments in an interactive online questionnaire hosted on the platform.

Emails to e-bulletin subscribers

The project team sent three emails to the Digital Infrastructure Plan e-bulletin subscription list to inform subscribers of the virtual public meetings and to remind them to complete the online questionnaire.

Social media

The project team used social media to share information about the DIP and the public consultations process through the City of Toronto's Facebook page, Twitter feed, and Instagram. From September 21 to September 29, 2021 there were Facebook posts and ads; Instagram posts and ads; and Tweets shared.

Community Outreach

The project team conducted the following community outreach activities:

- Email to all City Councillors and the Mayor with consultation details and request to share consultation information with their constituents.
- Printed poster advertising the consultation sent to all Toronto Public Library branches.

Engagement and reach

The following table summarizes the reach of engagement and communications tactics throughout the engagement period.

Engagement tool	Reach

Virtual public meetings	• 133 participants total
	  ○ 78 participants attended Sept. 28 meeting
	  ○ 55 participants attended Sept. 29 meeting

Online questionnaire	• 466 visitors with
	  ○ 49 respondents to the questionnaire
	  ○ 24 commented
	  ○ 154 total comments

Community Advisory Group meetings	• 12 members attended Sept. 14 meeting • 11 members attended Nov. 1 Meeting

Drop-in sessions	• 15 participants total
	  ○ 5 participants attended Oct. 4 session
	  ○ 4 participants attended Oct. 6 session
	  ○ 6 participants attended Oct. 13 session

Community Partner and Stakeholder presentations and meetings	• 148 participants total
	Advisory Committees:
	  ○ 12 participants at Toronto Accessibility Advisory Committee (Sept. 2)
	  ○ 12 participants at Confronting Anti-Black Racism Advisory Committee (Sept. 24)
	  ○ 13 participants at Two-Spirt, Lesbian, Gay, Bisexual and Queer Advisory Committee (Sept. 27)
	Other stakeholder group meetings:
	  ○ 30 participants at TECHNATION meeting (Sept. 15)
	  ○ 20 participants at Civic Tech Toronto meeting (Oct. 5)
	  ○ 19 participants at Cities Coalition for Digital Rights meeting (Oct. 7)
	  ○ 25 participants at Toronto Youth Cabinet meeting (Oct. 14)
	  ○ 2 participants at Connected Canadians meeting (Oct. 15)
	  ○ 15 participants at AI in Municipal Government Community of Practice meeting (Oct. 27)

Toronto Aboriginal Affairs Advisory Committee meeting	• 11 members attended Oct. 22 meeting

Email submissions and phone calls	• 9 participants total
	  ○ 7 participants submitted feedback by email (8 emails total)
	  ○ 2 participants submitted feedback by phone

Project webpage	• 1961 page views • 1161 unique visitors
Emails to contact list	• 3 emails to 564 e-bulletin subscribers

Engagement tool	Reach
Social media	• Three posts on Twitter (Sept. 20, 22, 23) with a total of 17,905 impressions and 268 engagements • Two posts on Facebook (Sept. 21 and 27) with a total reach of 4,175 and 70 engaged users • One Facebook newsfeed ad (Sept. 21 to 29) with a total of 76,423 impressions • One boosted Facebook event with a total of 18,608 impressions • One post on Instagram (Sept. 22) with a total of 28,630 impressions and 1,117 engaged. • One Instagram story ad (Sept. 21 to 29) with a total of 18,608 impressions
Community outreach	• Email to 26 members of Toronto City Councillors with details to promote consultation • Poster at 100 Toronto Public Library branches

Data analysis

All comments received through the consultation process have undergone a thematic analysis. This involves summarizing and categorizing qualitative data so that important concepts within the dataset are captured. Once the thematic analysis was completed for each question, the collection of themes was used to formulate the descriptive text in this report. It is important to note that comments received were wide-ranging. A fulsome documentation of all feedback can be found in the Appendices of this report.

Section 3: What We Heard

The following subsections provide a high-level overview of the key messages heard throughout the consultation on the draft DIP. Participants were asked to provide feedback on the six DIP principles and their corresponding vision statement, description, and policy areas.

Participants had the opportunity to share comments at the virtual public meetings, online questionnaire, Community Advisory Group meetings, community partner and stakeholder presentations and meetings, Toronto Aboriginal Affairs Advisory Committee meeting, and by email and phone. Participants were also invited to vote on their level of support for each of the policy statements through the online questionnaire.

Overall Key Messages

Feedback specific to each principle is presented further below. Across all feedback, several recurring key messages emerged. These overall key messages are as follows:

- It was recommended that the definition of digital infrastructure be expanded so that it is clearer that emerging digital applications and services such as digital ID, digital payment, digital automation, and vaccine passports are included in the definition.
- It was requested that the DIP's definition of local be clarified, so that domestic companies and organizations outside Toronto have clarity on how they can participate. Participants also asked about the scope of the DIP and asked for clarity on whether private use of data and technology would also be covered.

- It was suggested that the DIP should be clearer about which policies represent aspirational goals, and which policies represent commitments. It was also noted that the DIP should be transparent about competing goals that may affect policy implementation.
- Multiple participants and stakeholder groups recommended that the City conduct ongoing public engagement and education on the DIP, so that the public becomes more familiar with how the DIP relates to them as individuals. It was recommended that case studies with tangible examples and information sessions tailored to specific community groups be used to help make the material more relatable.
- It was recommended that the City invest significant resources into staff engagement and capacity development regarding digital infrastructure, to ensure the DIP's policies are adhered to and implemented.
- Multiple participants recommended that the City conduct engagement activities with local technology companies, the civic technology community, and nonprofits to encourage participation in DIP implementation and procurement processes.
- Concern was expressed that the collection of racial and identity-based data, and the use of surveillance technology, may lead to discrimination against equity deserving communities. It was noted that these communities should be engaged on how systemic biases inherent in technology are being addressed, and how individuals can control their personal data.
- Multiple participants and stakeholder groups expressed that the City website should be a priority area of improvement for the City, particularly in terms of user experience in searching for information and accessing digital services.
- It was recommended that the DIP provides more clarity on the specific roles and governance processes within the City that will evaluate and enforce its application. Participants identified the importance of identifying an accountability framework and measures for DIP implementation.
- It was strongly encouraged that the City collaborates with other municipalities and governments to align standards and develop publicly owned digital infrastructure.

Equity and Inclusion

Content

The vision statement for the principle was presented as follows:

> "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 and responsive to the needs of all Torontonians, including Indigenous, Black, equity-deserving groups, and those with accessibility needs."

The description of the principle was presented as follows:

> "This principle describes how the City of Toronto will ensure that people can enjoy their rights and freedoms, and feel safe and secure online when accessing City services (apps, web pages, bill payments, reservations, online permits etc.). All residents and visitors are entitled to respect and fairness online, benefitting from digital services and opportunities without discrimination. This principle reflects the City's motto "Diversity, Our Strength" in the development and use of digital infrastructure.

Equity in the context of digital infrastructure is vital: access to digital tools and services is directly linked to life opportunities, well-being, and freedom. The benefits and burdens of the digitized world have not been equally distributed and particular communities continue to experience disproportionate barriers to access and participation which has led to a digital divide. In addition, digital technologies and data are not neutral and have historically had harmful impacts on many communities. Achieving equity in the digital realm requires intentional strategies and investments to reduce and eliminate barriers to access of services and technology, as well as its fair application. Digital equity also requires an understanding of barriers (i.e. algorithm biases) facing Indigenous, Black and equity deserving communities including those with accessibility needs and strategies to ensure that they are able to participate and fully leverage the benefits of online spaces and technology (i.e. learning, content creating, business opportunities)."

The principle contains the following policy areas, each with their own series of policy statements:

- Equity, Inclusion, and Human Rights
- Accessible Digital Infrastructure
- Responsive Digital Infrastructure

Key points of feedback

Key points of feedback within this principle are outlined below, grouped within several main themes that emerged. Level of support and approval for the policy statements within each policy area, as indicated through the online questionnaire, is also included.

Vision and description

- It was indicated that explaining the City's definition of equity-deserving groups within the policy area description would be helpful.
- It was suggested that language regarding implementation of this principle should be reframed as a collective effort, as opposed to what the City will do. This will help enable equity-deserving groups to provide meaningful guidance on implementation.
- It was suggested that the description include a point about the DIP being a living document that will not take a static lens on equity.
- It was recommended that supporting reconciliation with Indigenous People be included as a unique principle that is separate to the Equity and Inclusion principle.
- Some participants suggested that there is a need for balance in how far the City is willing to accommodate all people in the City, and perhaps this should be acknowledged upfront.
- Multiple participants and stakeholder groups indicated that the DIP should explicitly recognize a 'right to analog' and commit to providing non-digital alternatives to accessing City services. It was noted that this may not need a new policy as the City already has an accessibility policy.

Equity, Inclusion, and Human Rights

- Multiple participants and stakeholder groups indicated that access to internet should be framed as a human right, as it is has become essential to receiving services. The DIP should articulate a clear goal of providing universal internet access to all residents and should ensure that all City facilities are enabled for public Wi-Fi access.

    - A specific aspect of this is instituting non-excludability, i.e. no resident should be excluded from internet access, especially on the basis of ability to pay. If residents are not able to pay for internet access, provisions should be in place to prevent or redress exclusion.
- It was noted that vulnerable people without a phone or internet cannot participate in virtual health care, which means they do not have equal access to health care or other government services.
- It was indicated that the DIP should include specific policies on digital health equity such as supporting programs that distribute data enabled devices to vulnerable people.
- It was recommended that the City advocate to the federal government about supporting improved internet access.
- It was noted that while efforts to protect the children's personal information are important, these should not exclude youth from being included in design decisions.
- It was noted that digital inclusion will require providing information in multiple languages, and that this should be based on proportionality of the population, rather than an 'all or none approach.'

Below is the level of support and approval indicated by participants for the policy statements in the Equity, Inclusion and Human Rights policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

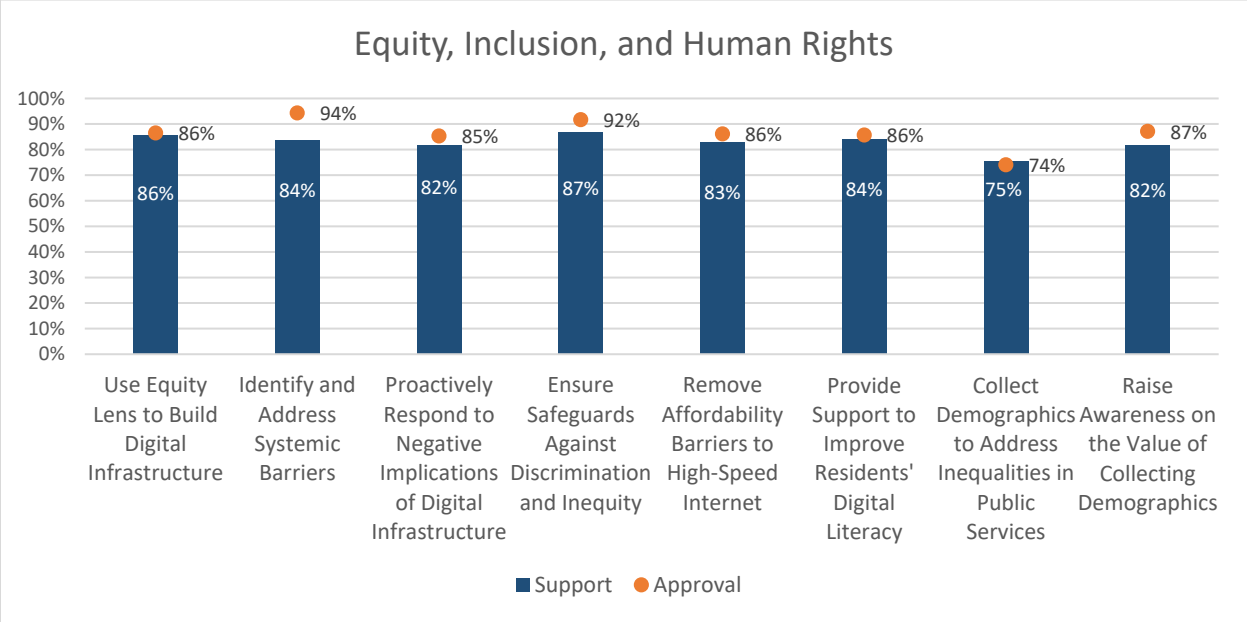

Figure 2: Levels of Support and Approval for the Equity, Inclusion and Human Rights Policy Area

Accessible Digital Infrastructure

- It was noted that the biggest barrier to strengthening digital literacy among seniors and older adults is anxiety. Targeted workshops and videos are an effective way to strengthen this group's digital literacy but should be careful to not trigger anxiety.
- Affordability is another common barrier for seniors and older adults. It was indicated that efforts to address this through lending should offer data enabled devices.

- It was noted that lack of access cannot be solely addressed by giving people devices because some people have legitimate reasons for not wanting to use technology, and so non-digital service channels must be provided.
- It was suggested that City-issued Requests for Proposals (RFPs) should include a clause that requires technology design to be centred around accessibility from the start of the design process rather than remediating at the end.

Below is the level of support and approval indicated by participants for the policy statements in the Accessible Digital Infrastructure policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

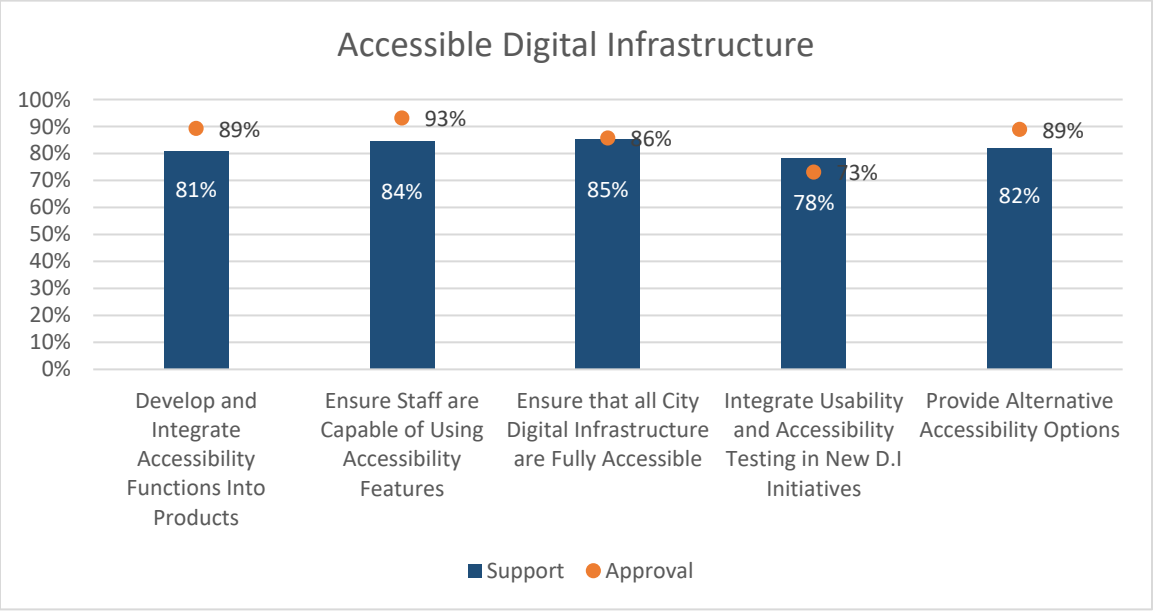

Figure 3: Levels of Support and Approval for the Accessible Digital Infrastructure Policy Area

Responsive Digital Infrastructure

- Multiple participants recommended that there be more opportunities for residents to share feedback with the City on digital infrastructure, such as through feedback buttons on every website page, and proactively conducting focus groups on user experience.
    - It was noted that end users of digital infrastructure and services need to be consulted at the beginning of the requirements and design process.
    - It was noted that people with disabilities need to be directly engaged in user experience testing.
- Multiple participants indicated that the user experience of the City website should be a priority for improvement.
    - Some participants noted having difficulty finding information and booking services on the City website, and that these website functions should be improved.
    - It was suggested that the City take an inventory of common user experience issues on the City website and create a user-centred design process for addressing them.

Below is the level of support and approval indicated by participants for the policy statements in the Responsive Digital Infrastructure policy area. Support is the average value of the responses,

and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

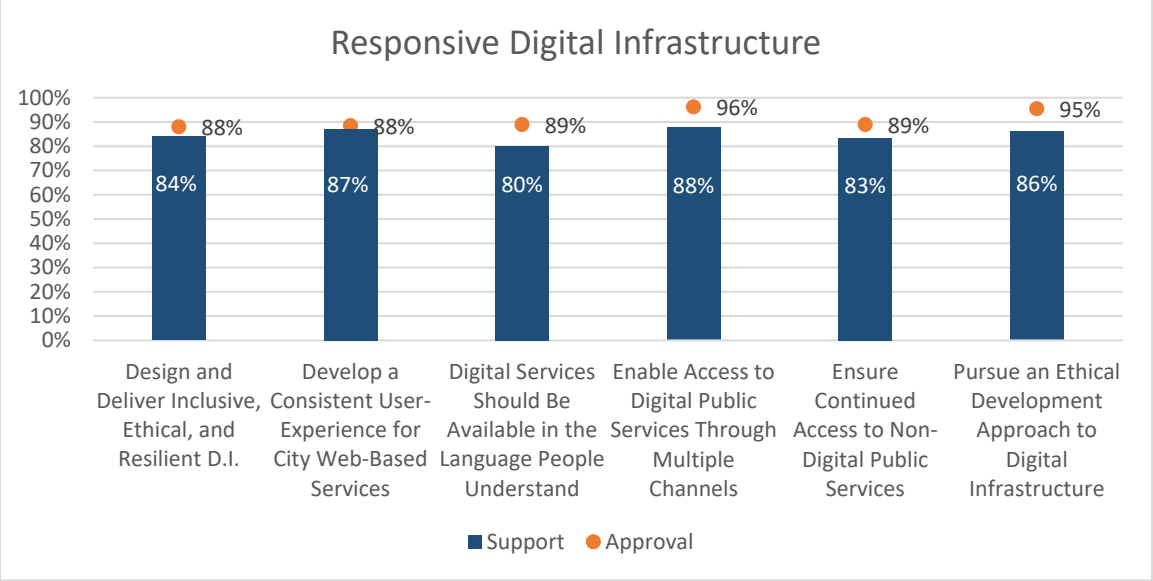

Figure 4: Levels of Support and Approval for the Responsive Digital Infrastructure Policy Area

Well-run City

Content

The vision statement for the principle was presented as follows:

> "Digital Infrastructure will enable high quality, resilient and innovative public services, and support the use of data and evidence to inform decision-making."

The description of the principle was presented as follows:

> "A well-run City depends on evidence-based decisions and new insights to inform recommendations, guide decisions, and ultimately enable better outcomes. Introducing more online interaction, paperless services, better access to data, and shared services can help create efficiencies and ensure public resources are better allocated. Resilience will enable the public service - and its digital infrastructure - to survive, adapt, thrive, and ensure business continuity in the face of the chronic stresses and acute shocks that may arise. Tangible outcomes for residents, businesses, and visitors can include fewer traffic collisions, enhanced quality-of-life, and a more efficient transportation system, and a government that works in deep collaboration with the people it represents to advance an agenda of fairness and prosperity for everyone."

The principle contains the following policy areas, each with their own series of policy statements:

- Digital Transformation
- Data Governance
- Asset Management
- Toronto as a Connected Community

Key points of feedback

Key points of feedback within this principle are outlined below, grouped within several main themes that emerged. Level of support and approval for the policy statements within each policy area, as indicated through the online questionnaire, is also included.

Vision and description

- Some participants noted that the term 'resilience' should be more clearly defined as it relates to digital infrastructure, and that transparent guidelines be provided for how the City will evaluate resilience. It was recommended that resilience considerations should be organized into a dedicated policy area within the Well-run City principle.
- It was indicated that the DIP should more explicitly support the development of an interconnected strategy with other levels of government to bolster resilience to shocks.

Digital Transformation

- It was indicated that more specific language be used about validating the effectiveness of a proposed digital solution. It was suggested that policies reflect the need to develop a standard evaluation method.

Below is the level of support and approval indicated by participants for the policy statements in the Digital Transformation policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

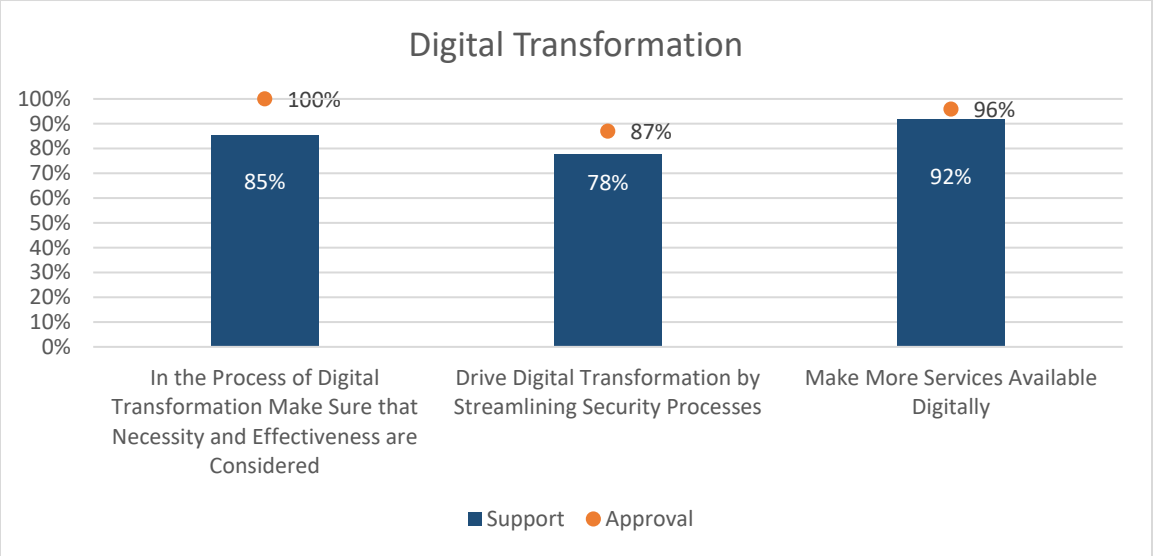

Figure 5: Levels of Support and Approval for the Digital Transformation Policy Area

Data Governance

- Multiple participants and stakeholder groups indicated that more details on how data will be stored and governed by the City should be provided. It was suggested that guidelines for considering the architecture of data with respect to expandability and scalability be included.
- It was recommended that the DIP's data governance frameworks should align with those being set by the provincial government to minimize compliance burdens on businesses.

Below is the level of support and approval indicated by participants for the policy statements in the Data Governance policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

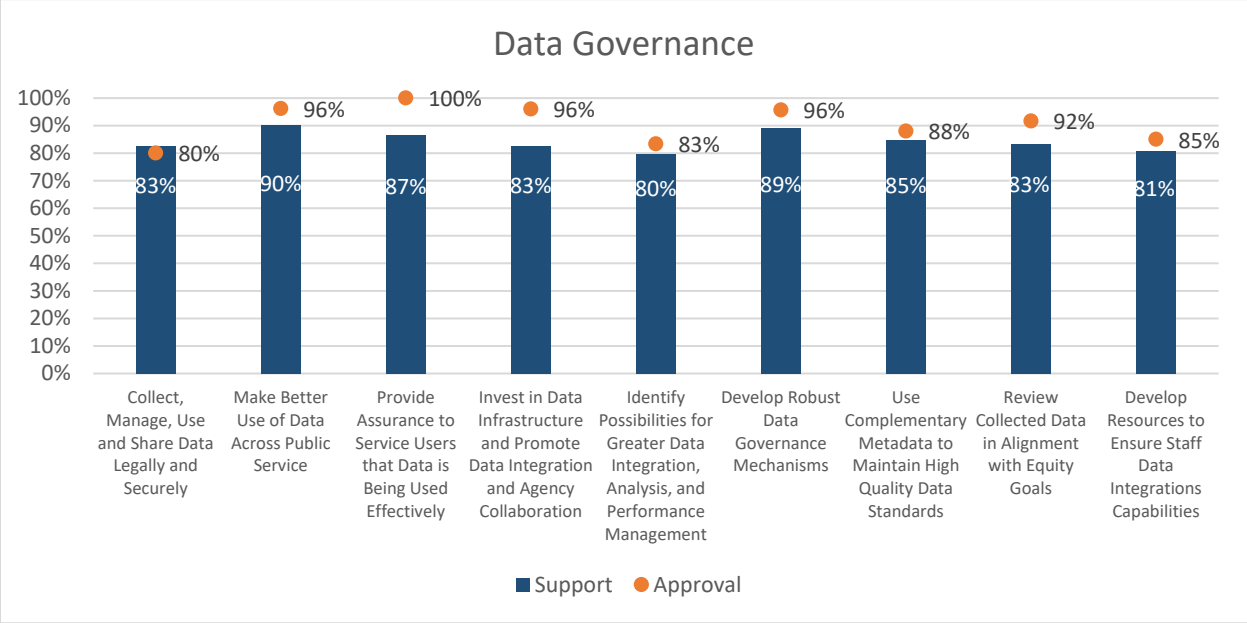

Figure 6: Levels of Support and Approval for the Data Governance Policy Area

Asset Management

- Some participants noted that while the use of sensing devices is good, the data should not be locked but rather should be open, transparent, and accessible in real time. Some participants recommended creating a sensor registry.
- It was suggested that sensor data should receive an annual audit that lists the data's uses, the improvements they bring, and any negatives or risks they carry.

Below is the level of support and approval indicated by participants for the policy statements in the Asset Management policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

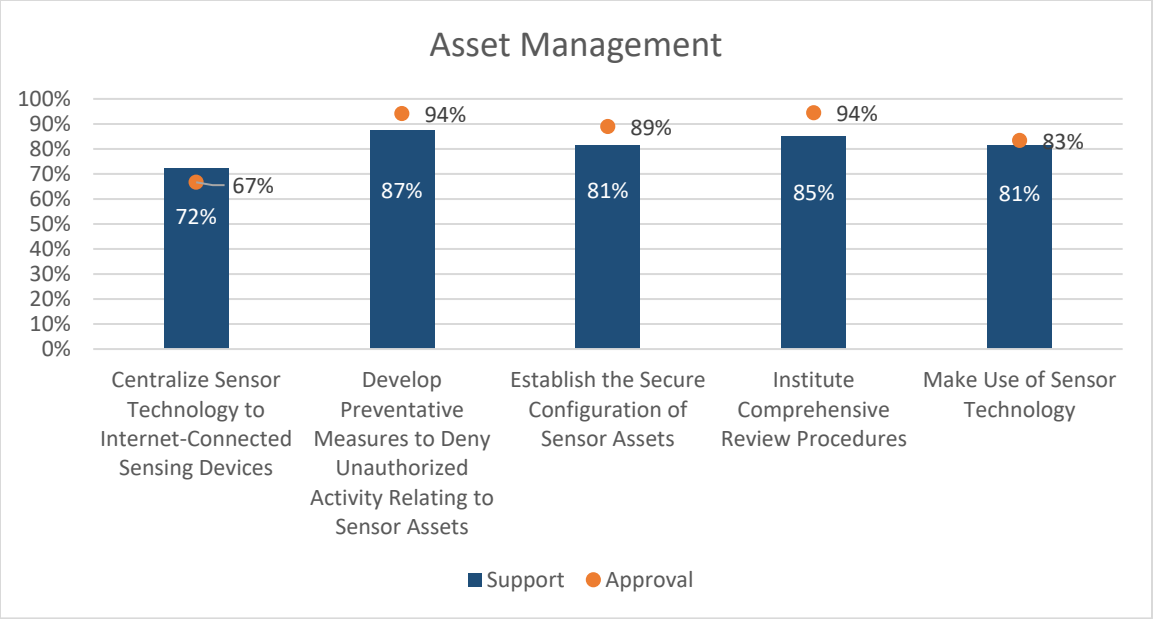

Figure 7: Levels of Support and Approval for the Asset Management Policy Area

Toronto as a Connected Community

- It was suggested that the City create its own high speed internet infrastructure, following the example of places such as Chattanooga, Utah, and Stockholm. It was noted that a basic public internet could be offered at minimum monthly fee to all residents, while providing freedom of choice to end users wishing more specialized services from telecommunications companies.

Below is the level of support and approval indicated by participants for the policy statements in the Toronto as a Connected Community policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

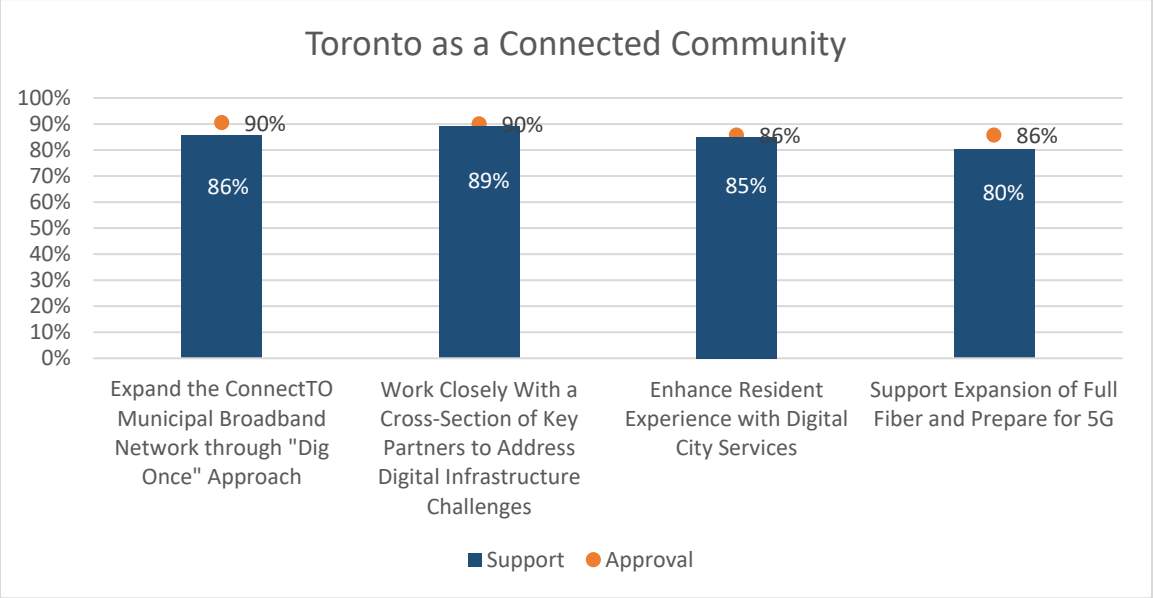

Figure 8: Levels of Support and Approval for the Toronto as a Connected Community Policy Area

Social, Economic, and Environmental Benefits

Content

The vision statement for the principle was presented as follows:

> "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."

The description of the principle was presented as follows:

> "This principle is focused on leveraging digital infrastructure to create a society that supports equitable and inclusive benefits whether for social, community, health, economic or environmental prosperity."

The principle contains the following policy areas, each with their own series of policy statements:

- Social Benefits
- Economic Benefits
- Environmental Benefits

Key points of feedback

Key points of feedback within this principle are outlined below, grouped within several main themes that emerged. Level of support and approval for the policy statements within each policy area, as indicated through the online questionnaire, is also included.

Vision and description

- Some participants recommended adding to or changing the term 'benefits', so that the language includes acknowledgement of harms. It was indicated that there was a preference for the principle to be titled 'Social, Economic, and Environmental Benefits and Avoidance of Harms', and for this to be reflected in the policy area titles as well. Alternatively, it was suggested that the word 'benefits' be replaced with 'impacts' or 'outcomes.'
- It was suggested that the principle could be expanded to consider benefits to Canada as a whole, with regards to purchasing, social procurement, and ethical production from Canadian companies.

Social Benefits

- It was indicated that the impacts of digital infrastructure on arts and culture should be included in this policy area.
- Some participants expressed concern about procurement with bigger technology companies, citing the PayIT platform, where public control is lost and there is a lack of alignment to deliver social benefits.
- Concern was expressed that it will be difficult to satisfy Social Procurement with respect to digital infrastructure as the technology industry can lack diversity. It was recommended that the City begin by taking time to build relationships with equity-deserving communities and organizations, as the first step in implementing this policy goal.

Below is the level of support and approval indicated by participants for the policy statements in the Social Benefits policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

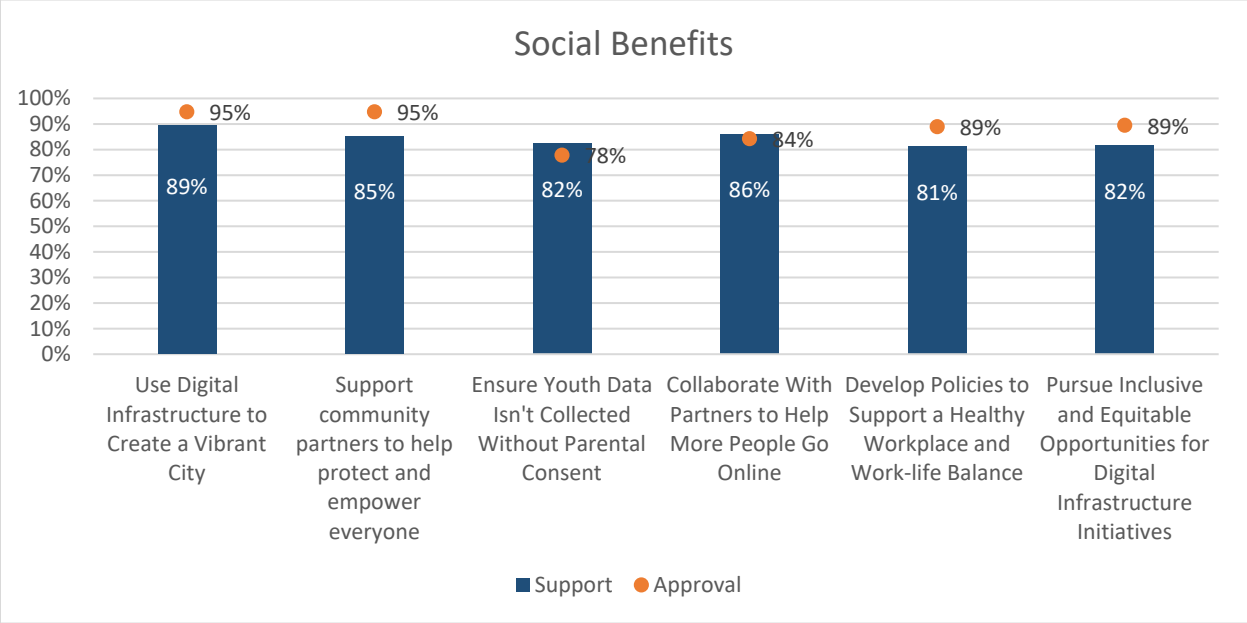

Figure 9: Levels of Support and Approval for the Social Benefits Policy Area

Economic Benefits

- Some participants encouraged initiatives that make it easier for entrepreneurs to get started, for example 'one-stop registration' that minimizes any requirements to show up in person to file paperwork and that automates as many approvals as possible.
- It was suggested that a pathway be created for unsolicited proposals, to encourage innovative suppliers to put forward ideas that will help deliver better public services.
- It was suggested that the City can host more opportunities for domestic technology companies to showcase their technologies (for example through demo days, roundtables, or forums) with the intent of broadening the City's relationships with these companies.
- It was noted that local companies are often dissuaded to engage with the City on procurement because of time, resources, administrative burden, and the level of effort required to navigate the procurement process. It was suggested that targeted outreach be conducted with local technology firms to educate them on the procurement processes for digital infrastructure.

Below is the level of support and approval indicated by participants for the policy statements in the Economic Benefits policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

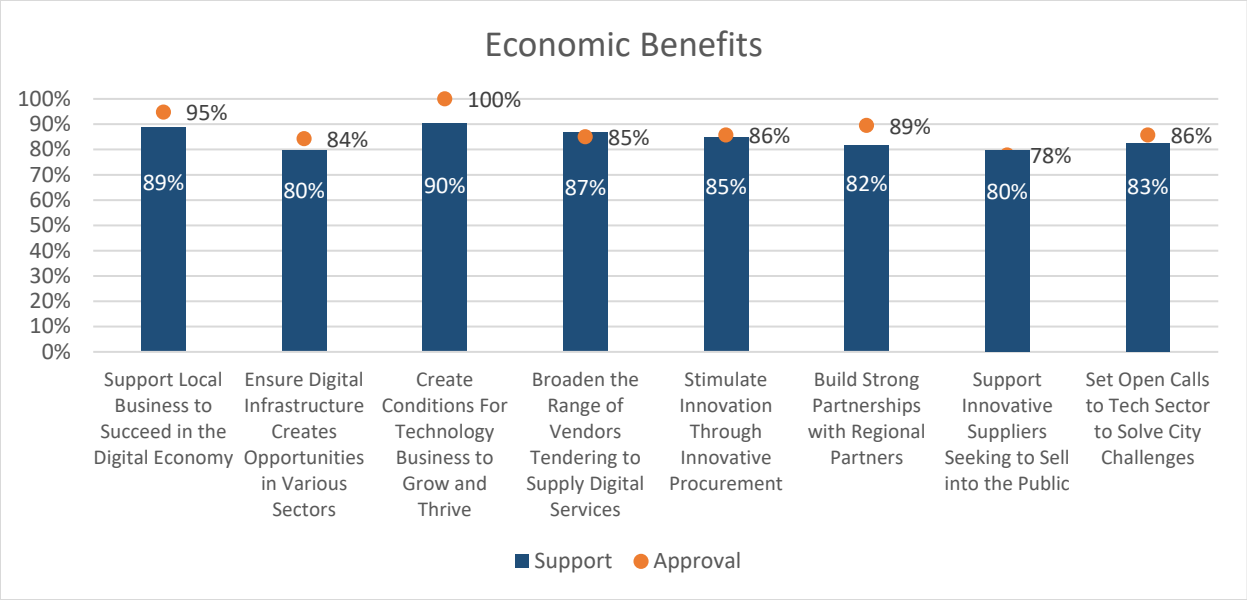

Figure 10: Levels of Support and Approval for the Economic Benefits Policy Area

Environmental Benefits

- It was noted that the policy statement referring to Sustainable Development Goals should be more detailed so that staff, particularly in procurement, are clear on how to apply this consideration. It was suggested that example targets, or metrics be included.
- Multiple participants and stakeholder groups suggested that policies be added on conducting a full life-cycle analysis of energy-use and environmental impact when evaluating new digital infrastructure, with the intention of minimizing this impact.

Below is the level of support and approval indicated by participants for the policy statements in the Environmental Benefits policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

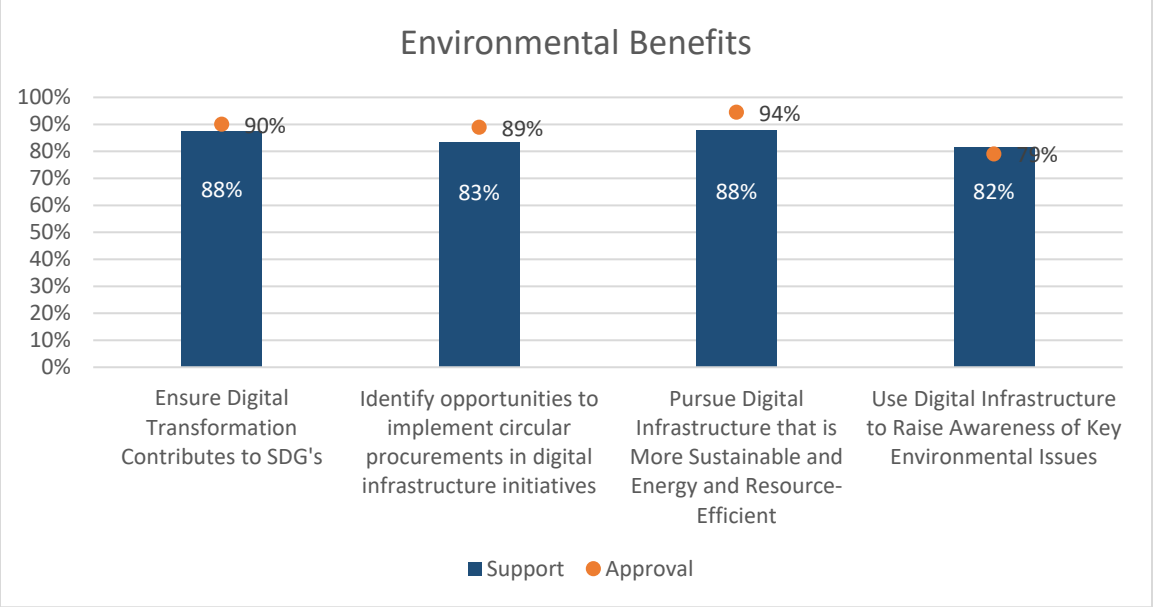

Figure 11: Levels of Support and Approval for the Environmental Benefits Policy Area

Privacy and Security

Content

The vision statement for the principle was presented as follows:

> "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."

The description of the principle was presented as follows:

> "Many public services are now deeply reliant on digital infrastructure, and the ensuing interconnectedness between City systems and data places greater focus on privacy, integrity, safety, and resilience. Yet this increasing reliance on digital infrastructure brings with it an increased potential for vulnerabilities that could lead to cybersecurity attack, breach, failure, or disruption. Toronto's digital infrastructure requires a Privacy- and Security-by-Design approach to ensure that the benefits created are not overshadowed by the privacy and security risks that may be created."

The principle contains the following policy areas, each with their own series of policy statements:

- Security
- Privacy
- Consent
- Digital Identity

Key points of feedback

Key points of feedback within this principle are outlined below, grouped within several main themes that emerged. Level of support and approval for the policy statements within each policy area, as indicated through the online questionnaire, is also included.

Vision and description

- It was suggested that this principle should include policies on pursuing external partnerships and undertaking advocacy to strengthen privacy and security beyond the City's digital infrastructure, and to collaborate on the development and interpretation of legal frameworks.
- It was indicated that the vision statement's reference to meeting legislative requirements represents inadequate vision. It was noted that the DIP's round one engagement report issued in January 2020 mentioned broad participant consensus for wanting policies under the privacy principle to exceed minimum standards.
- It was recommended that a full list of legislative requirements that apply to this principle should be included in this principle.
- Multiple participants and stakeholder groups indicated that the language in this principle should be more user-friendly. It was noted that terms such as 'privacy-by-design' may not be broadly understood.

Security

- Some participants indicated that security needs to be approached with a user-centred lens with respect to City staff and residents. It was noted that traditional IT approaches to security can frustrate users and drive them to adopt risky workarounds.
- It was noted that there is a lack of references to “smart IT” in the DIP, and policies around the security of these devices.

Below is the level of support and approval indicated by participants for the policy statements in the Security policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

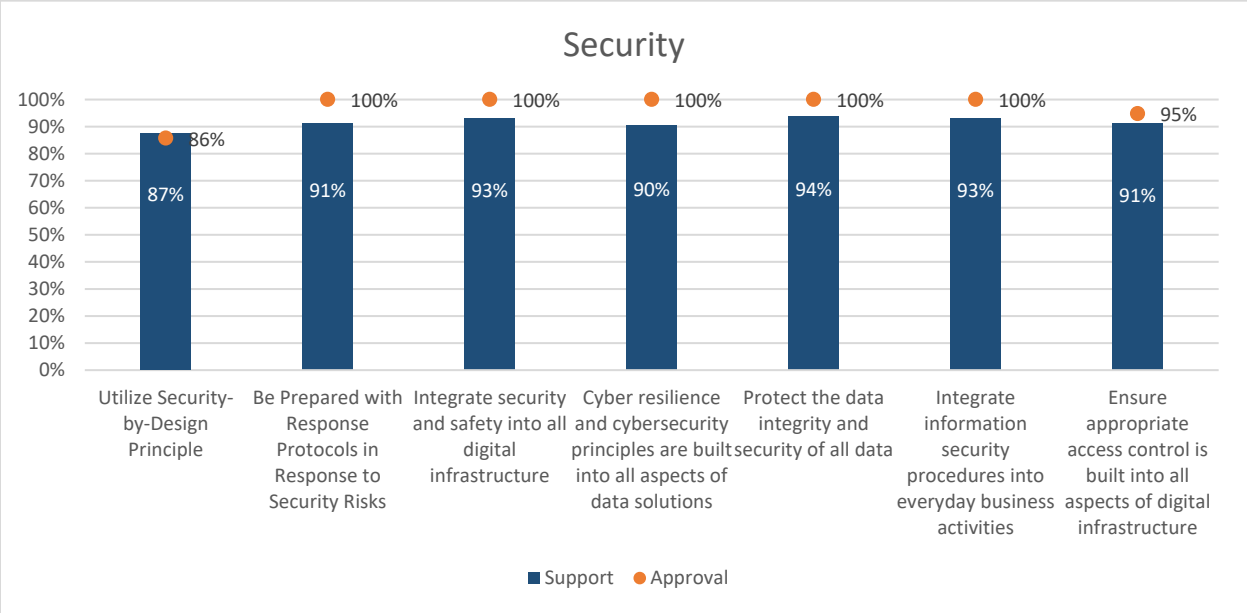

Figure 12: Levels of Support and Approval for the Security Policy Area

Privacy

- Some participants expressed concern that the Privacy Impact Assessment (PIA) is inadequate for the modern digital landscape. One person commented that staff who typically conduct PIAs are usually policy specialists that lack technical knowledge.
- It was suggested that a more participatory process that allows public input in weighting privacy risks and benefits be included.
- It was noted that provincial and federal legislation on privacy is under review and that City policies should be able to accommodate potential changes to privacy regulation. In addition, it was noted that the City should collaborate with provincial and federal governments to interpret how new technology will apply to existing or emerging legal frameworks on privacy.

Below is the level of support and approval indicated by participants for the policy statements in the Privacy policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

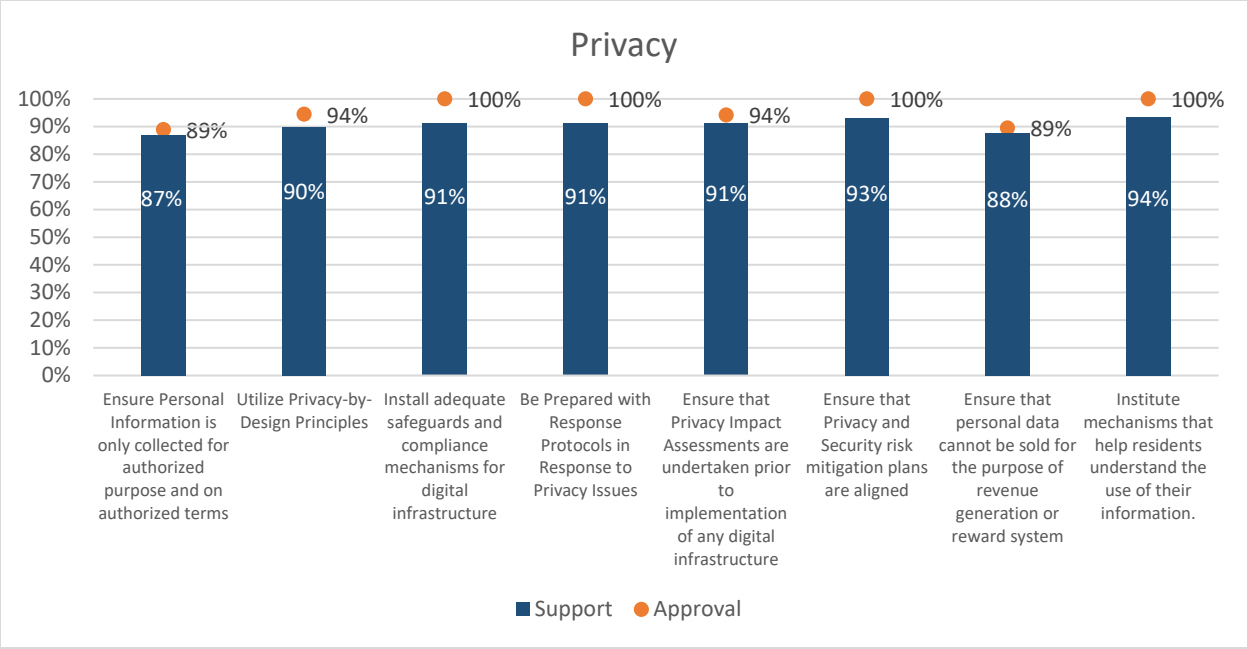

Figure 13: Levels of Support and Approval for the Privacy Policy Area

Consent

- It was noted that while there is a policy that personally identifiable information cannot be sold by the City, the City's position on the sale of de-identified data should be made clear.
- It was noted that the City's approach to data usage for behavioural nudging or non-commercial ad targeting should be included.
- Multiple participants and stakeholders expressed that the City should explicitly state which divisions and agencies will have access to data that is collected. It was noted that details on which divisions or agencies will not have access should also be stated.

Below is the level of support and approval indicated by participants for the policy statements in the Consent policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

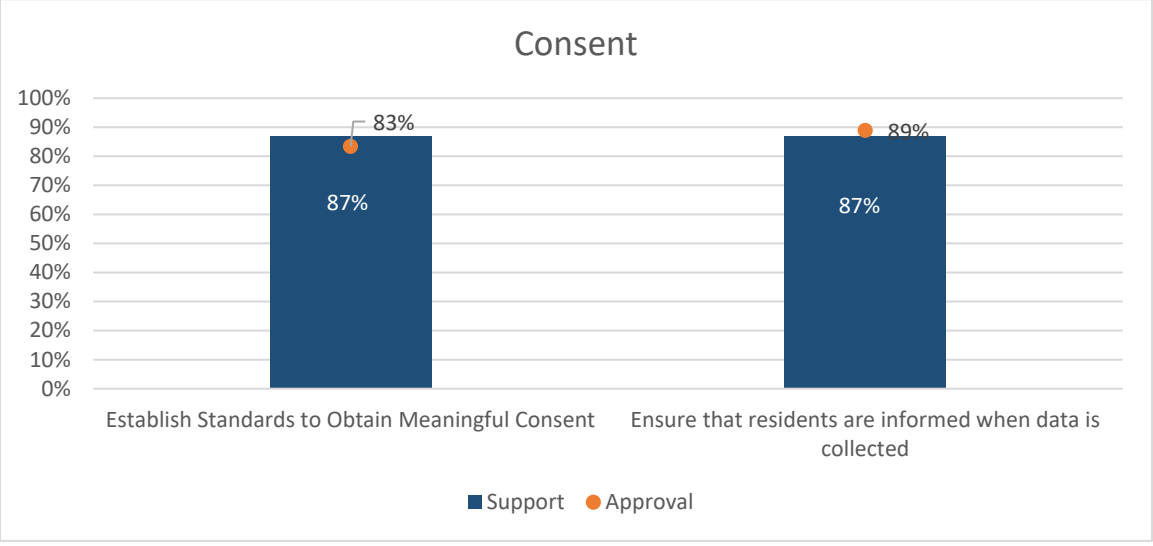

Figure 14: Levels of Support and Approval for the Consent Policy Area

Digital Identity

- Some participants cautioned against the practice of associating a user ID with personal information.
- It was indicated that allowing the option to have anonymous IDs may result in more people creating digital identities, sharing their data, and engaging with digital infrastructure.

Below is the level of support and approval indicated by participants for the policy statements in the Digital Identity policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

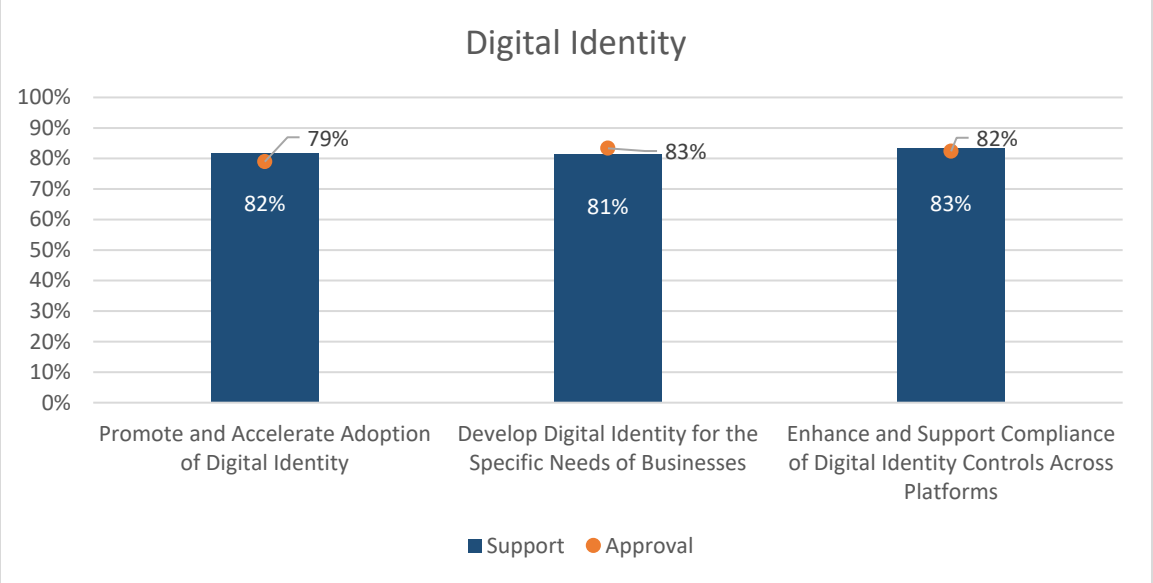

Figure 15: Levels of Support and Approval for the Digital Identity Policy Area

Democracy and Transparency

Content

The vision statement for the principle was presented as follows:

> "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."

The description of the principle was presented as follows:

> "Cities are the closest democratic institutions to the people. As such, they have an important role to play in building trust in digital services and infrastructure that supports our community. This can be done in a variety of ways, including by ensuring that human rights principles of privacy, freedom of expression, and democracy, are incorporated by design into the City's digital infrastructure."

The principle contains the following policy areas, each with their own series of policy statements:

- Public consultation and participation
- Access to information and transparency
- Open contracting
- Trust in digital government
- Algorithmic transparency and responsibility

Key points of feedback

Key points of feedback within this principle are outlined below, grouped within several main themes that emerged. Level of support and approval for the policy statements within each policy area, as indicated through the online questionnaire, is also included.

Vision and description

- It was expressed that policy statements in this principle should support resident participation in the City's wider democratic processes, such as City Council meetings, through digital infrastructure.

Public consultation and participation

- It was indicated that while public consultation is appropriate for gathering feedback on the goals and vision for new technology, they are not sufficient for gathering public input on the design of digital services. Many participants and stakeholders recommended that more end-user specific outreach and research be conducted to understand needs and evaluate usability.
- It was recommended that the 'have a voice' language in this policy area should be changed to something more specific.

Below is the level of support and approval indicated by participants for the policy statements in the Public Consultation and Participation policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

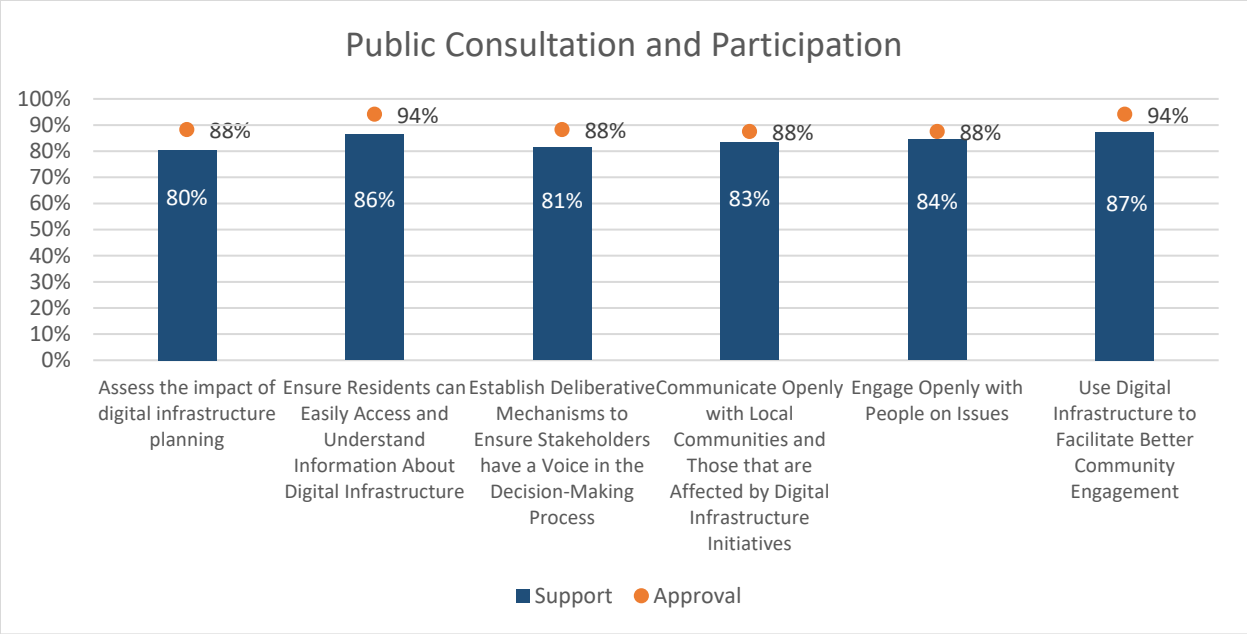

Figure 16: Levels of Support and Approval for the Public Consultation and Participation Policy Area

Access to information and transparency

- Some participants were uncertain about the value of an open-source specific software registry, suggesting that it might be better to have a registry of all software the City uses, that includes proprietary software.

Below is the level of support and approval indicated by participants for the policy statements in the Access to Information and Transparency policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

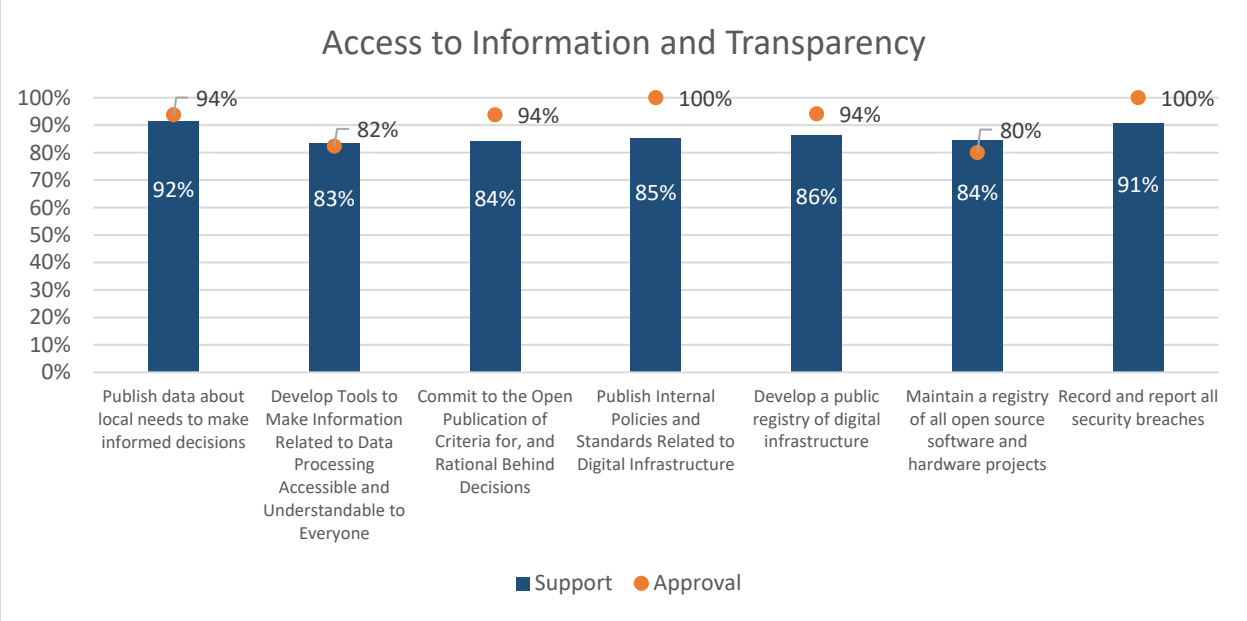

Figure 17: Levels of Support and Approval for the Access to Information and Transparency Policy Area

Open contracting

- Some participants indicated that more details should be provided on how policies would be translated into specific procurement processes.
- It was suggested that the City conducts pre-procurement activities with small and medium-sized technology businesses and nonprofits that are not vendors of record to encourage them to participate.
- It was noted that the DIP's definition of 'local' should be explained to provide clarity on whether companies outside of Toronto can bid on procurement opportunities.

Below is the level of support and approval indicated by participants for the policy statements in the Open Contracting policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

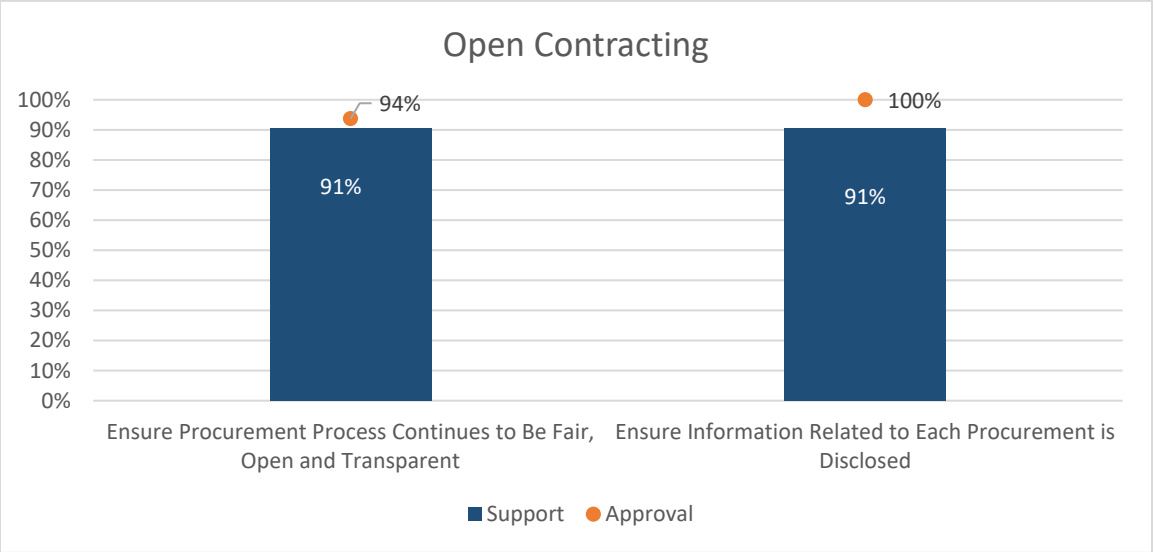

Figure 18: Levels of Support and Approval for the Open Contracting Policy Area

Trust in digital government

- It was indicated that 2S+LGBTQ communities feel criminalized by the collection of racial and identify-based data and facial recognition technology, due to lack of trust in how this will be used.
- It was recommended that a policy statement be added that clarifies how law enforcement will access City data from sensor technologies.
- It was suggested that individuals be able to opt-out of automated systems for data collection.

Below is the level of support and approval indicated by participants for the policy statement in the Trust in Digital Government policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

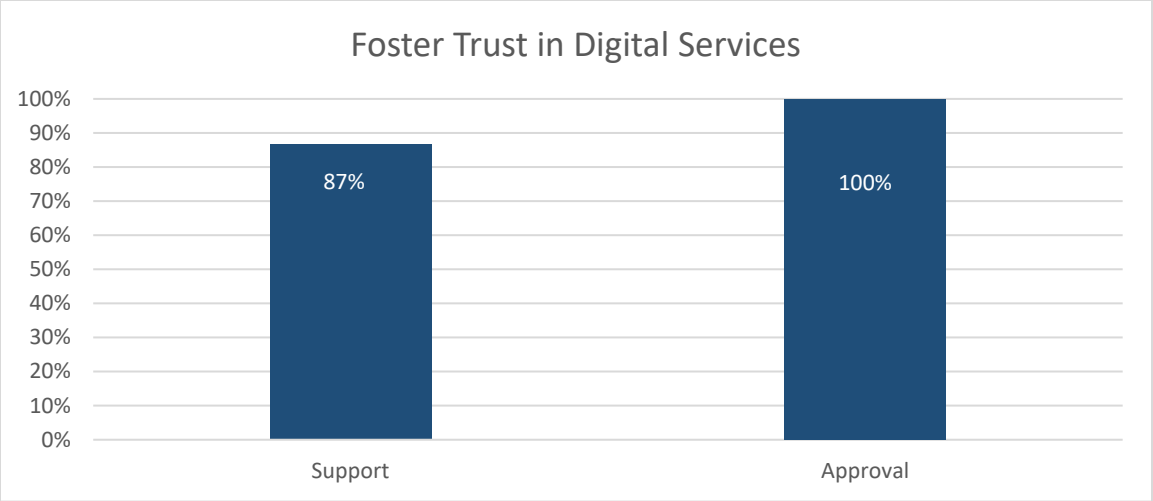

Figure 19: Levels of Support and Approval for the Trust in Digital Government Policy Area

Algorithmic transparency and responsibility

- It was recommended that the DIP align policies in this principle with the AI framework being developed by the provincial government. It was noted that this alignment is necessary to avoid unnecessary hurdles for businesses.
- It was suggested that the policy area include a statement on when AI cannot be used so that people are not discriminated by algorithmic bias.
- There was disagreement amongst participants on the importance of defining AI. It was indicated that trying to define AI narrowly may create delays in publishing the Algorithm Register, and that the publishing of this register should be prioritized.
- It was also indicated that 'all algorithms' is too large a scope for the DIP, and that the DIP should distinguish between artificial intelligence, algorithms, automated decision making and machine learning.
- It was suggested that the AI registry include the energy and carbon footprints of algorithmic models, as well as their performance results for public services.

Below is the level of support and approval indicated by participants for the policy statements in the Algorithmic Transparency and Responsibility policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

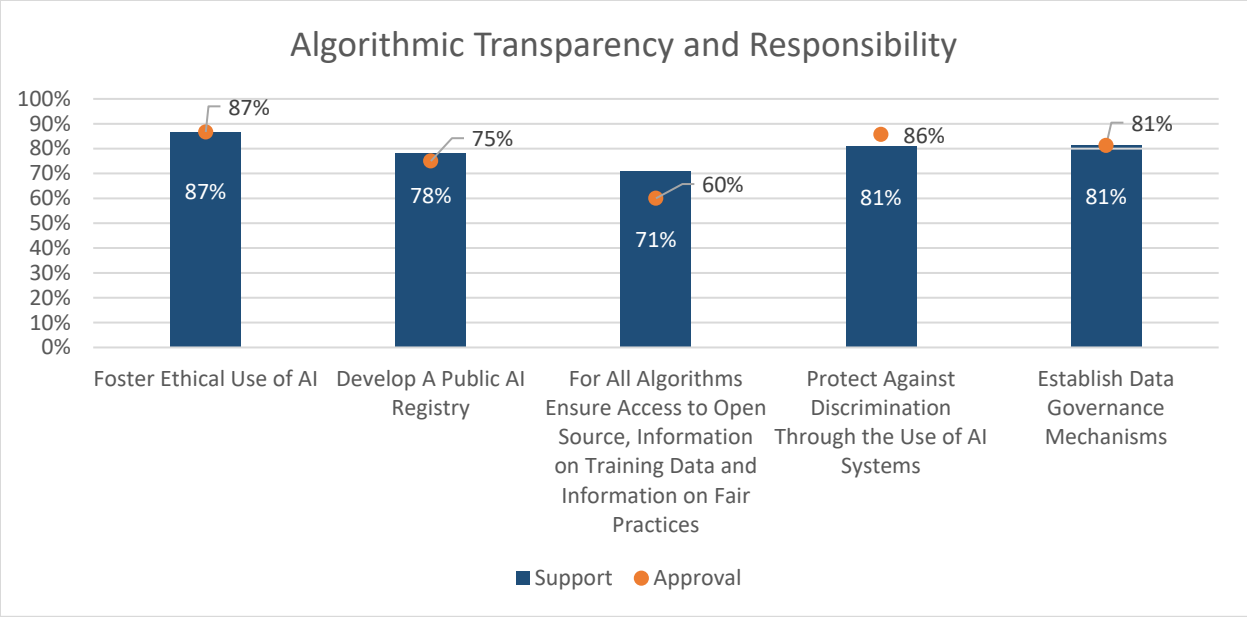

Figure 20: Levels of Support and Approval for the Algorithmic Transparency and Responsibility Policy Area

Digital Autonomy

Content

The vision statement for the principle was presented as follows:

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

The description of the principle was presented as follows:

> "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, community consultation, and the needs of its residents to adapt to living in the digital realm. It is an approach to building out digital infrastructure in a way that ensures the City has the ability to autonomously control and maintain its digital infrastructure assets through constructive and self-directed relationships with technology companies and vendors. Historical ways that the City's control of digital infrastructure assets have been limited or restricted include:
>
> - Products having embedded or contractual limitations, that could - for example - restrict the addition of extra functionality into the product
> - Manufacturers and vendors placing restrictions (or prohibitions) on who can repair, modify or maintain digital infrastructure, and
> - Both of these above situations contribute to "vendor lock-in" scenarios, where it becomes impractical to switch to another product or vendor, even if the original product or vendor has a known deficiency.
>
> These scenarios can also limit the interoperability of digital infrastructure."

The principle contains the following policy areas, each with their own series of policy statements:

- Open source software
- Intellectual property
- Open standards and interoperability
- Data residency in Canada
- Maintenance and repair
- Control

Key points of feedback

Key points of feedback within this principle are outlined below, grouped within several main themes that emerged. Level of support and approval for the policy statements within each policy area, as indicated through the online questionnaire, is also included.

Vision and description

- It was suggested that specific language be included on working with front-line workers and community organizations in the implementation of this principle.
- Multiple participants and stakeholder groups expressed concern that the City will have difficulty achieving this principle without significant investment in updating its internal IT management capabilities.

Open source software

- It was suggested that the City should develop a set of web application programming interfaces (APIs) that are open city portals would both provide data as well as accept software input and requests from the public, the civic technology community, and others.
- It was noted that the DIP should support City staff in understanding how to collaborate with the civic technology community. It was suggested that policies encourage proactive communication on what APIs the City will not provide access to.
- It was noted that more details are needed on the specific processes that will be used to evaluate open source software. It was suggested that the DIP include a list of approved open source tools and development methods as well as blacklisted tools and development methods.
- Some participants suggested that in-house development should focus on the integration of well-established open source software tools.
- It was recommended that the City coordinate with other municipalities to share the costs of building and maintaining a common open source digital infrastructure.

Below is the level of support and approval indicated by participants for the policy statements in the Open Source Software policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

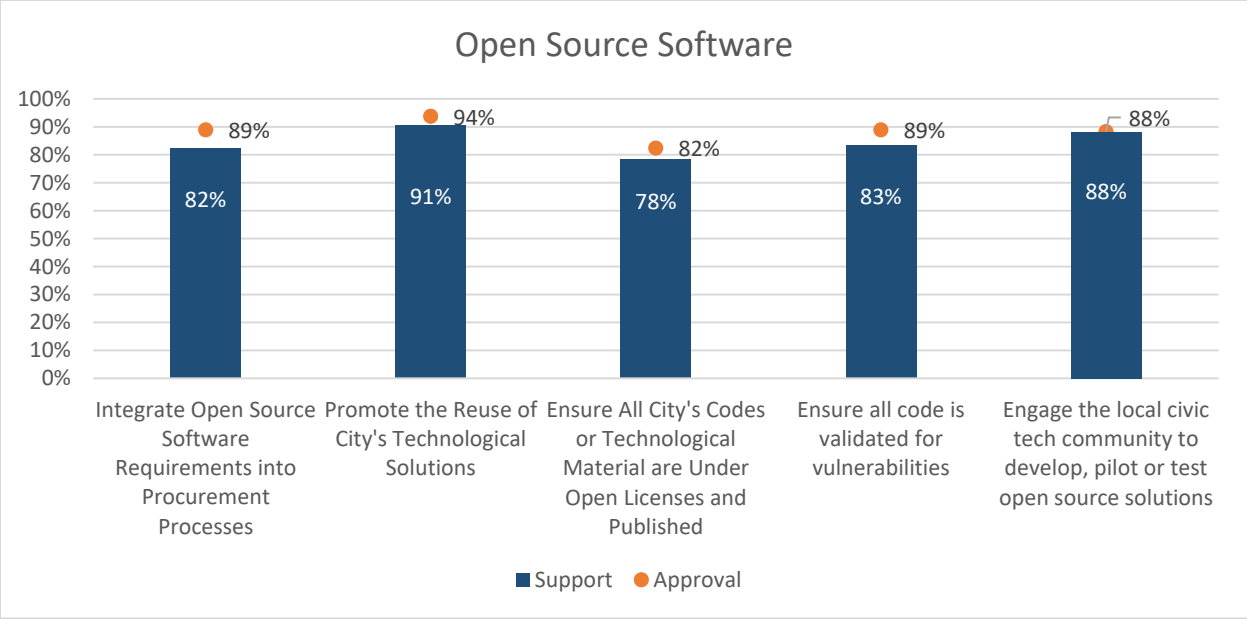

Figure 21: Levels of Support and Approval for the Open Source Software Policy Area

Intellectual property

- To improve its digital autonomy, it was suggested that the City focus efforts on developing its internal capacity for making technology decisions and adjustments, rather than a focus on owning digital infrastructure.
- It was recommended that the City use standard open licenses so that innovators do not face a new layer of legal barrier.

Below is the level of support and approval indicated by participants for the policy statements in the Intellectual Property policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

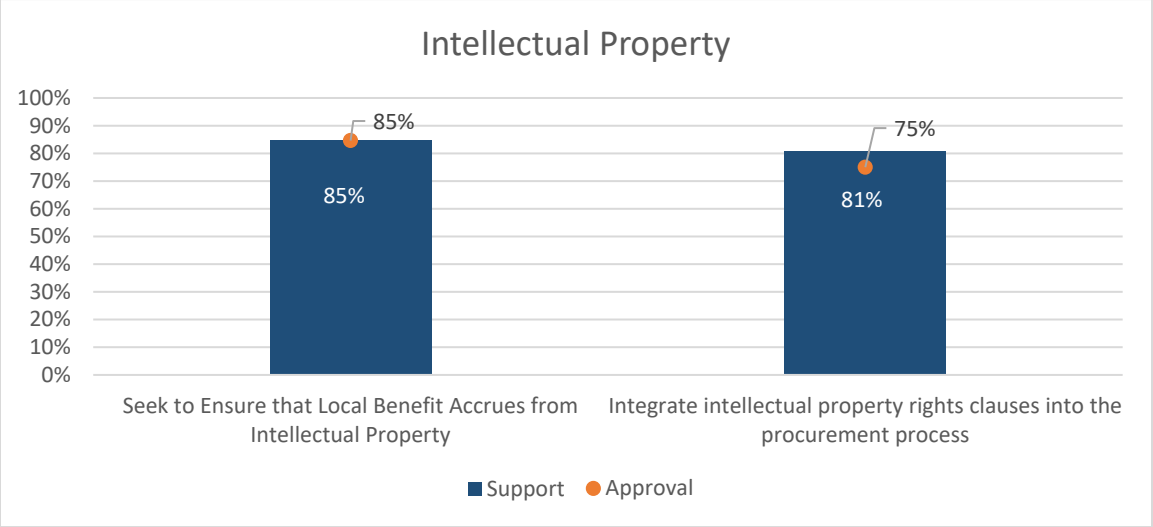

Figure 22: Levels of Support and Approval for the Intellectual Property Policy Area

Open standards and interoperability

- It was noted that healthcare interoperability should be a key consideration in making decisions on digital infrastructure.
- It was noted that consultation and collaboration with industry experts will be necessary to understand the needs and capacities of companies to integrate with the City's digital realm.
- It was recommended that the DIP align with ISO standards for this policy area.

Below is the level of support and approval indicated by participants for the policy statements in the Open Standards and Interoperability policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

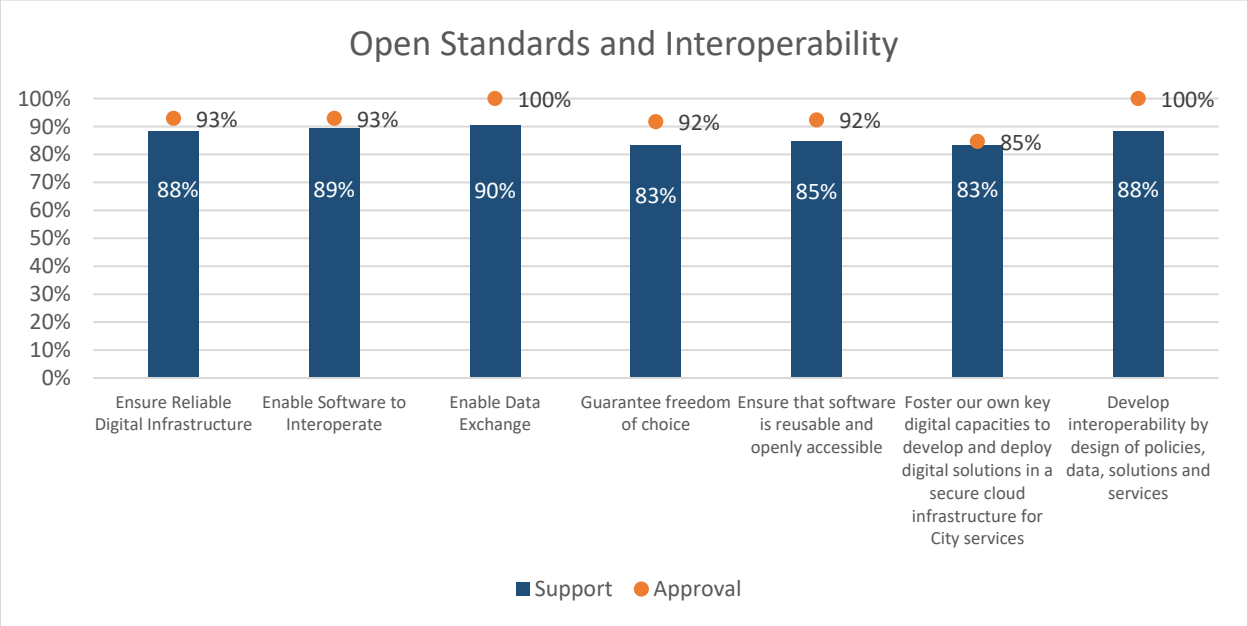

Figure 23: Levels of Support and Approval for the Open Standards and Interoperability Policy Area

Data residency in Canada

- Concern was expressed that the current data residency policies will stifle innovation.
- It was indicated that these policies do not reflect that all major cloud providers are globally distributed. It was suggested that limiting data residency in Canada to personally identifiable information (PII) is more reasonable, while allowing other data to go outside Canada.
- It was noted that more details should be provided on how this policy area should be interpreted by staff, particularly with respect to making choices about cloud versus on-premises offerings for future RFPs.

Below is the level of support and approval indicated by participants for the policy statements in the Data Residency in Canada policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

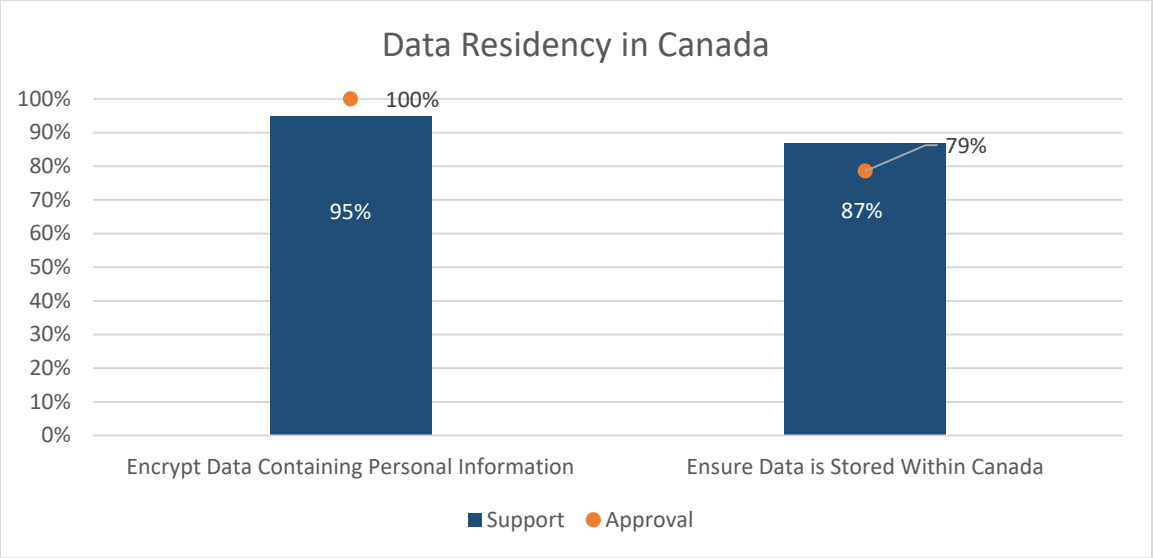

Figure 24: Levels of Support and Approval for the Data Residency in Canada Policy Area

Maintenance and repair

- It was suggested that a product management approach (as opposed to a project-centred approach) to digital services will ensure infrastructure and applications are maintained.
- Some participants supported the inclusion of right-to-repair policy.
- It was suggested that the cost implications of right-to-repair requirements should be acknowledged, since many vendors may be disqualified from bidding under this policy.

Below is the level of support and approval indicated by participants for the policy statements in the Maintenance and Repair policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

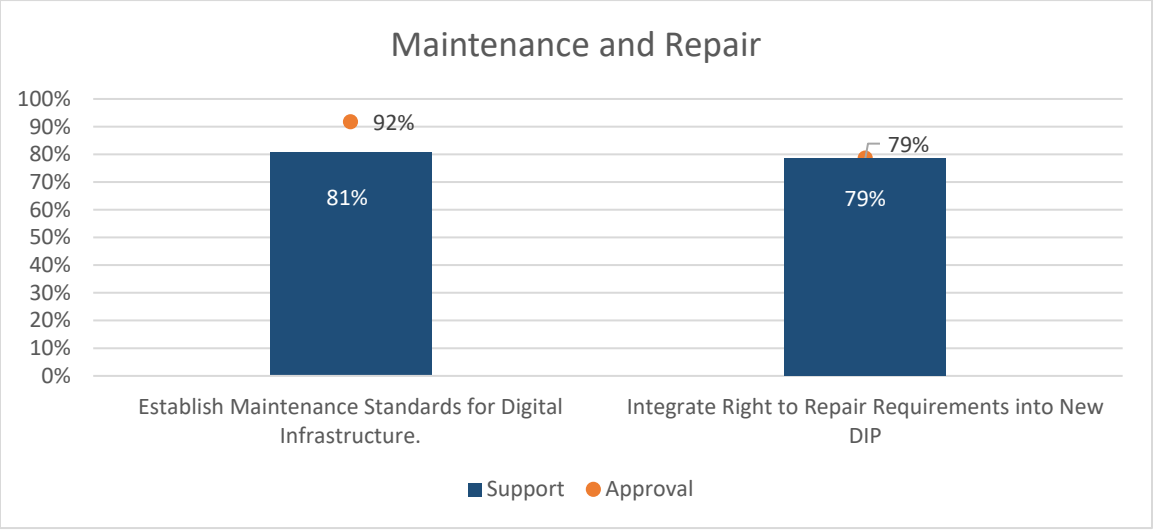

Figure 25: Levels of Support and Approval for the Maintenance and Repair Policy Area

Control

- Many participants and stakeholders expressed concern with the policy area language that implies City control of data, whereas the trend is to give end-users control. It was

suggested that this language be changed to acknowledge resident control or democratic control.

- It was suggested that the 'right of data portability' within the City's data governance framework be considered.
- It was recommended that policies align with the province's plan to implement self-sovereign identity where individuals can control how their personally identifiable information is shared.
- It was noted that group digital autonomy should also be acknowledged, especially as it relates to data or personal information involving Indigenous peoples. It was noted that the DIP should strengthen government commitments to enable First Nations data sovereignty.

Below is the level of support and approval indicated by participants for the policy statements in the Control policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

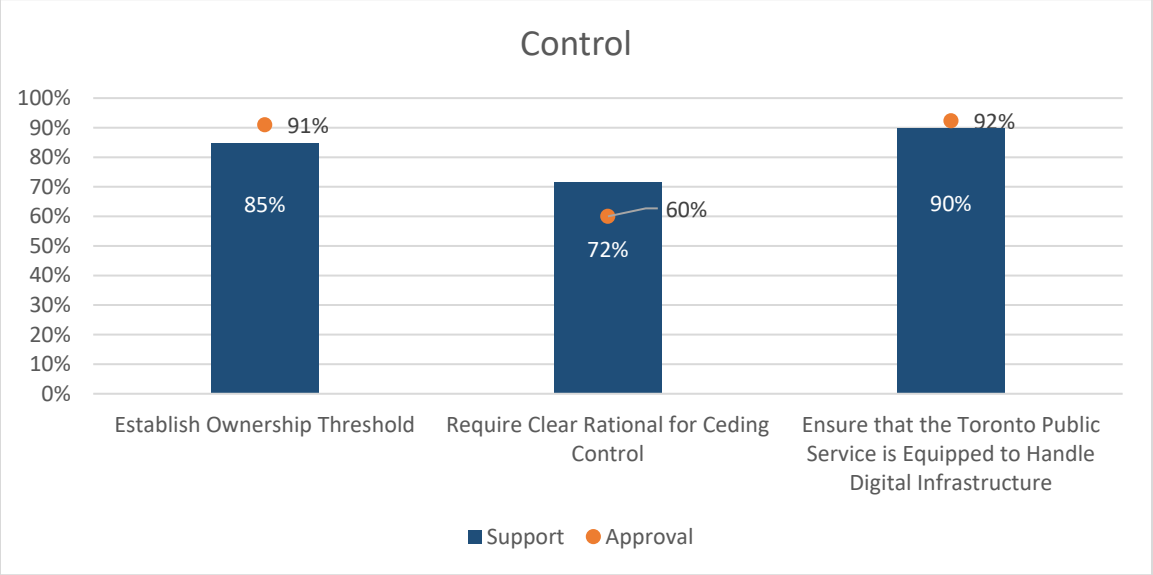

Figure 26: Levels of Support and Approval for the Control Policy Area

Section 4: Next Steps

The feedback received during this consultation process will be reviewed by the City and, where possible, incorporated into the draft DIP being presented to Council at an Executive Committee meeting in 2022. The Executive Committee meeting will be public, where interested parties can make deputations regarding the DIP.

Appendix A: Virtual Public Meetings Summary

The following is a non-verbatim summary of the Q&A sessions from the virtual public meetings held on September 28 and September 29, 2021. Questions are marked by a 'Q,' comments are marked with a 'C', and answers and responses are noted with an 'A'.

September 28, 2021

Q: How will the City be tracking outcomes with respect to the Equity and Inclusion principle? How will the City determine that people are treated equally and everyone who would like to be included, including those who cannot afford technology, are included and are able to participate in digital infrastructure?

A: We are supporting the work of the City's Data for Equity Strategy, which used to be known as the Disaggregated Data Strategy. This strategy is about collecting data that identifies where service delivery is inequitable. We have also identified a need to improve access to devices and deliver training on using devices safely. We will work in partnership with the Toronto Public Library and other City divisions to develop and deliver these programs. The ConnectTO program is another area of work for our team which is about addressing issues around access to the internet and leveraging City assets to bridge the digital divide.

Q: Is there a plan to engage with Toronto's open-source software community?

A: We have identified open-source as a policy gap for the City. In implementing the DIP, this will be an area where we will have to develop a more specific policy approach. As part of that process, we are having conversations with other cities that do have an open-source policy. For example, we connected with City of Montreal staff about their experience integrating open-source into their procurement process.

Q: How will the DIP address algorithmic bias and the need for transparency in existing technology used by companies, and how will this apply to companies that are coming into the city for the first time?

A: The initial scope of the DIP is focused on digital infrastructure that the City operates or uses. In terms of transparency of AI and algorithms, we are looking to institute a registry of AI that is used by the City, and this would also look at making bias more transparent. We definitely have more work to do to understand the implications of algorithmic bias in the operations of private companies and how the City can address this. However, having the DIP framework can help City divisions to have conversations about the principle of transparency and this dialogue might extend out to influence the behaviours and policies of partners in the private sector.

Q: Does the DIP have any plans to improve referral times for 24-Hour Respite Sites or other classes of shelters?

A: The DIP is meant to outline a vision for digital infrastructure in the city, but it's not a document that identifies specific solutions. The DIP would be used by various City divisions, such as the Shelter, Support & Housing Administration (SSHA), to inform the development of their specific digital initiatives, but the DIP doesn't go into that level of detail.

Q: **How will work on the DIP be coordinated with work by the Police Services Board, as Toronto Police Services is excluded from the scope of the DIP?**

A: Though we do not have oversight over Toronto Police Services, there are different ways that we can talk to our colleagues to make sure they understand where we are coming from and have discussions to move this file forward. For example, we hold what is called the CIO roundtable, which is a meeting that is chaired by Lawrence Eta, the City's Chief Technology Officer, chairs, and attended by Toronto Police Services.

Q: Will there be an approval process for digital infrastructure akin to the land use planning process?

A: This depends on if there is an intersection with the land use planning process. An example of this may be a development application that proposes the use of digital infrastructure in a publicly accessible part of the building, then potentially the DIP may be integrated into that planning process. More generally, the DIP would be integrated into existing process at the City, such as the procurement process, the disposal process, or environment and energy, where digital infrastructure used by the City is concerned.

Q: Who is running the City's digital procurement?

A: There is not a separation between digital procurement and other types of procurement. Procurement at the City is handled by the Purchasing & Materials Management Division (PMMD). The DIP project team is working closely with PMMD to discuss how DIP policy statements relevant to procurement can be implemented.

Q: How do federal policies, provincial policies, and the City's policies relate with respect to privacy and security?

A: The City engages with other levels of government quite often as it relates to privacy legislation. For example, we engage regularly with the Ontario Ministry of Government and Consumer Services, as well as the Information and Privacy Commissioner of Ontario, to discuss what can be addressed through updates to privacy legislation. We also have a relationship with the Canadian Centre for Cyber Security and engage other federal level agencies as well.

C: I'm disappointed to see that the vision statement for the Privacy and Security principle is that the City will follow the law. This is far less aspirational than many of the other DIP principles. It is less than I would have hoped for given the learnings from the Sidewalk Labs and Waterfront Toronto smart city project. I know that in January 2020, when the report from the initial round of consultations was issued, that there was a lot of people that said that City policies should exceed minimum legislative standards. We know that the laws are not good enough, so a vision of merely following the law is less than this city could do to protect its residents in an era of big data and smart technology.

C: I applaud the City's aspiration to develop open-source solutions and encourage feedback and development from the public, particularly the civic technology community at large. In order to serve both of those goals at once, the City could consider developing a set of web APIs that are open city portals which would both provide data under privacy-controlled conditions and security-controlled conditions and accept input and requests from software developed by the public, the civic technology community, and others.

Q: Do social procurement policies apply to digital infrastructure as well? Can you describe the evaluation matrix used in the procurement process and if equity and inclusion are a part of the scoring?

A: The City of Toronto Social Procurement Program does apply to digital infrastructure. Furthermore. the DIP project team is engaged in ongoing discussions with colleagues in the procurement division (PMMD) about incorporating DIP principles into how digital infrastructure is evaluated. Information on the Social Procurement Program can be found on the City website at: https://www.toronto.ca/business-economy/doing-business-with-the-city/social-procurement-program/

Q: What networks with other cities is the project team involved in to learn from best practices internationally?

A: The City of Toronto became a member of the Coalition Cities for Digital Rights (CC4DR) in October 2019, and more recently became a member of the executive team of that coalition. The coalition is based primarily in Europe but does extend into North America. Other key members from North America include New York, Montreal, Portland, and San Antonio. In Europe, we are in touch with city staff from Barcelona and Amsterdam primarily. Participating in the coalition provides us a great deal of insight into how other cities are working on the same issues we are focused on in the DIP, and it is a great way to troubleshoot, and problem solve challenges. For example, we had the opportunity to review and comment on London's new Emerging Technology Charter, and we will similarly be presenting the DIP to coalition cities in October, where they will have a chance to give us thoughts and feedback as part of this consultation process.

Q: Is there a reason why social, economic, and environment benefits are lumped into one principle? Especially, when a service can benefit one of those but not the others.

A: The DIP principles are written from a perspective of advancing public interest and prosperity. From that lens it is difficult to parse out one of social, environmental, and economic from the other, because there are linkages and dependencies with all three to the prosperity we are trying to achieve for the residents and businesses of Toronto. So, we do see value in doing an evaluation of all those issues together. That said, depending on the project, we do recognize that there will be trade-offs, and those trade-offs will be considered in the evaluation process.

Q: It may make sense for the DIP to be kept in permanent beta mode to allow for technological and geopolitical changes, as well as to receive and respond to real time public feedback in a transparent way. Is the DIP intended to be a living document?

A: The intent is that the DIP will be a living document. Similar to an official plan for development, the intent is that the DIP grows and changes over time, and that there are review process to update the plan to make sure that it reflects the changing nature of technology.

Q: Why are we doing this consultation? Does the City not have enough expertise to write this plan?

A: We see this consultation as an important opportunity for the public to have transparency into the City's process of developing the DIP, and we do believe it can get better with public and stakeholder input.

Q: I hope the impact of automated shuttles on the jobs of transit employees is being considered. So, in the pursuit of social, economic, and environmental benefits, how do other unintended consequences get factored in?

A: The DIP is hoping to address these types of secondary impacts of technology and how they impact the quality of life for both residents and workers. There is a policy statement in the DIP around identifying and proactively putting safeguards around potential harms of digital infrastructure. As the DIP is implemented, this will take the form of guidance to City staff to consider the potential harms associated with introducing a new technology, and how this can be addressed and communicated transparently to the public.

September 29, 2021

C: Just to remind the project team, I am asking for a wording change to the definition statement for digital infrastructure, that is at the beginning of the DIP draft, to add digital automation as a type of digital infrastructure. In the DIP principles, my main concern is the principle about benefits, because we should acknowledge that technology is not always beneficial. So, I would like that principle to be titled 'economic, social, and environmental benefits and avoidance of harms', and this should also be reflected in the policy area names for each of those three categories. I also did suggest a couple of policies that refer to the full life-cycle costs that I think would be reasonable to add to the policies, and I will send them in writing, but I am more concerned about the names of this principle and its categories than the specific policies. I want the principle to recognize that in addition to benefits, there are harms, and these should be avoided.

Q: What does the DIP mean for a layperson using the City website and accessing City services?

A: The DIP will impact how City services are designed and delivered. The DIP serves to provide all City staff with a guide on how the public wants digital infrastructure to be developed. For example, it encourages staff to integrate usability and accessibility testing with people with lived experiences in different areas to improve City services. While the project team is not directly working on the City website, the DIP provides guidelines to City divisions that do develop and update the website and online apps around improving access to services. The DIP also does not assume that all services will be delivered digitally. The DIP recognizes that there are cases where services are not delivered digitally and where they are delivered digitally that an alternative means should be provided.

C: Regarding the Equity and Inclusion principle, my suggestion is to change wording to 'people with disabilities' as opposed to 'those with accessibility needs.'

Q: Have you considered concerns about the collection of race-based data? There is controversy about it and its risks, especially around mixing data in control over decision-making.

A: Yes, we are addressing this issue through work we are doing with colleagues in the City's People & Equity division, who are leading the development of the Data for Equity Strategy. They are looking at collecting disaggregated race-based data, and we are working with them to figure out how that data might be used and shared.

Q: Sensors were mentioned a few times throughout the presentation. What uses of sensors are you talking about and what kind of sensors? Is LiDAR on the table?

A: Which type of technologies are used depends on the unit or division that is implementing a solution, but there are a number of different sensors that are possible to be used by the City. In

terms of application scope, the DIP is focused on digital infrastructure that interacts with the public realm, which are spaces on private property that are publicly accessible, such as malls, as well as publicly owned spaces.

Q: Will there be additional detail on which legislative requirements would apply to the Privacy and Security principle? For example, how might Personal Information Protection and Electronic Documents Act's (PIPEDA's) consent-based model be extended to Municipal Freedom of Information and Protection of Privacy Act (MFIPPA). What ethical guideless are you using, either developed in Canada, Europe, or elsewhere? Can you publish a list of laws and policies under use?

A: That is a great suggestion to add details on the legislative requirements. We will take this feedback away and look at adding details and a list of legislation. We often have dialogue with other levels of government about the impact of new federal and provincial legislation on the municipal level. So, we can continually update portions of the DIP that are impacted as legislation changes over time. We also interact frequently with the Information and Privacy Commissioner of Ontario on these types of issues to understand what policies and procedures the City should be thinking about to proactively protect privacy.

Q: Based on the DIP principles, what would digital autonomy for ConnectTO look like?

A: ConnectTO is a program focused on addressing the digital divide. It aims to leverage city assets and city processes to ensure that everyone has access to affordable high-speed internet. The DIP will help guide the evaluation of ConnectTO solutions through the lens of DIP principles. Part of this is being transparent with the public about trade-offs that are involved in different solutions. For example, the Digital Canopy solution which creates free public Wi-Fi for targeted residential buildings was provided through a donation. Because the City has not invested money into this solution, the City has less autonomy over the solution, though it works in partnership with the donor. Acknowledging this is part of applying the DIP to ConnectTO.

Q: How does the DIP connect with policing?

A: The Toronto Police Service is not accountable to the Chief Technology Officer (CTO). However, the CTO does lead a regular roundtable, which the Toronto Police Service is a part of, where initiatives like the DIP are discussed. These discussions with other agencies help to build interest, understanding and encouragement in terms of utilizing the DIP principles in the work they do.

Q: Can you provide an example of how the City's ArcGIS Online Asset Management System would reflect the DIP?

A: An intersection with the Well-run City principle is that the asset management system allows the City to better manage resources through construction coordination on a geographic basis, which increases efficiency of work at the City and reduces impacts on residents, businesses and drivers. This leads to social benefits and reduced curb cuts which would lead to reduced waste and environmental benefits. From a Democracy and Transparency lens, there would be the opportunity to bring this tool into a public facing open data channel so that people can have insight into some of this planned activity.

Q: What has the Indigenous consultation been on the DIP?

A: We have reached out to the Indigenous Affairs Office at the City of Toronto and we will be presenting to the Aboriginal Affairs Committee to get their input. We have reached out to a community organization that works with Indigenous communities in delivering social services, to present the DIP and get their input. We have also taken into consideration the First Nations Information Governance principles of Ownership, Control, Access and Possession (OCAP) that were developed by and for First Nations communities. This is some of the outreach that we have done, and we are happy to do more if there are any other groups that are identified.

Q: It seems like the consultation approach is biased towards English speaking people. What efforts are being made to seek input from non-native English speakers?

A: The City does provide access to a translation tool on the website, so anything that is available on the website can be translated. However, this tool may not be able to translate certain jargon terms. This is a known limitation of this tool, and we can look into that more if this is a concern.

Q: How will the DIP policies guarantee no harm when implementing and or regulating technology that uses our biometric data.

A: There are several policy statements that speak to proactively identifying potential harms and consequences, such as bias and discrimination, and placing safeguards against those, as well as placing guidelines around what data can and cannot be collected. This work is in partnership with the City Clerk's Office that regulates privacy. The DIP also has policies around carrying out privacy impact assessments and being transparent about any potential harms that may result. In terms of articulating the risks it is important to be proactive in communications and to not use technical language which may limit people's ability to understand and give meaningful consent.

Q: How long will data be kept for? Will there be review mechanisms to look at how long data sets should be kept versus destroyed after a certain time? This could allow for cost savings around unnecessary data retention and less privacy risk and data breaches.

A: We do have standard processes for defining how long records are kept within the City, that are part of our regular review processes. When we are consulting with City divisions on what information they are looking for to operate their business, we always guide them around collecting the least amount of information possible and minimizing the data collection, so that we are only using what we absolutely need to carry out the services that the City offers. This means that we are only keeping what we need for the specific time that it is operationally necessary for.

Q: If we are to build a livable city, I think the Equity and Inclusion and Social, Economic, and Environmental Benefits principles should take topmost priority. These principles did not rate high on the Slido survey, and I am wondering if this is a trend across the city. Are you concerned that the overall DIP may not adequately address the digital divide?

A: We are very concerned about bridging the digital divide and that is why there is a different project called ConnectTO that is underway to address this issue. When we think about the digital divide, we are not just thinking about access to the internet, but also access to devices and access to the skills that are needed to use those devices. This is not work that we do alone, rather we collaborate with other City divisions and boards like the Toronto Public Library. We are also keeping in mind that there is a greater reliance on digital technologies to deliver City services. As City staff, when we are evaluating the DIP, we see the six DIP principles as

interconnected and equally important, and the purpose of the Slido survey is to see what is resonating with those who are attending the consultation.

Q: Will digital identities be associated with personally identifying information or will there be ways for people to create digital identities in an anonymous manner? For example, associating one's name with the digital identity versus having an anonymous user account.

A: Currently generic IDs are used in a very limited fashion. Our current policy is that end users will be identifiable by name by the user ID. We must look at the specific scenario or specific project that is being implemented to further elaborate.

Q: What kind of evaluation frameworks are in place to ensure procurement of digital infrastructure is inclusive for domestic technology companies?

A: There is no specific framework for digital infrastructure procurement, rather there is a City of Toronto procurement policy that is meant to be inclusive and promote competition. We are also engaging various groups in the local tech community representing small and medium businesses to receive their input on how the procurement process can be improved and making them aware of the DIP principles and different supports that the City of Toronto offers.

Q: Can you explain the end vision for the DIP and how it relates to me as an individual, as well as how it will improve services for Toronto residents?

A: The purpose of the DIP is to provide a coherent vision for how the City will use data and digital infrastructure, and evaluate both opportunities and harms of new technology. By providing guidelines to all City divisions around developing and improving digital services in a consistent manner and with the end-user in mind, the intended outcome for residents is better service. An example of this can be residents having easier access to information through the City website and their City accounts. The DIP is also intended to make it clearer to residents how technology is being used by the City and provide them with insights into the decision making process. Through the implementation of the DIP, processes and policies will be made more transparent and open to residents, which will ultimately make the City more accountable.

Q: How will the DIP interact with how the police are able to access and use data?

The DIP is a framework that can help various City divisions to interact with the Toronto Police Service on the principles of the DIP. For example, the Social Development, Finance, and Administration (SDFA) division at the City is doing work with the Toronto Police Service, and they are a part of this project’s discussion and consultation process. So, the DIP is a document that SDFA can utilize to support them in their work with the Toronto Police Service in terms of managing the use of data and mitigating the biases within data and any artificial intelligence.

Q: How might we incorporate more explicit risk mitigation for racialized and marginalized people?

The DIP has specific policy statements around proactively identifying risks and placing safeguards to mitigate those risks. It does not identify specific risks as this would depend on the specific technology solution being considered. We are also working with Social Development, Finance and Administration (SDFA) division which has a Confronting Anti-Black Racism unit that has done work over the last several years to address risks and issues faced by black and

other racialized communities. The City's Data for Equity Strategy, and digital equity policies will also help address this.

Q: Will the open contracting policy in the DIP encourage a pre-procurement policy to promote competition that includes nonprofits funded through social trust? The traditional vendor of record is a barrier to non-technical vendors.

A: We can take this comment and suggestion back to our procurement colleagues and share that feedback with them. We will also share a link to the City's Social Procurement Program, which is not going to address all issues, but it is one program in place to encourage more diverse suppliers to the City: https://www.toronto.ca/business-economy/doing-business-with-the-city/social-procurement-program/

Appendix B: Ethelo Online Questionnaire Responses

The following is a summary of the feedback received on Ethelo, the online engagement platform used to receive feedback on the draft DIP. The questionnaire opened on September 28, 2021 and closed on October 19 2021. In total, 49 people participated. Feedback on the principles and their associated policy areas is provided below.

Equity and Inclusion

This principle had a range of 22 to 37 total votes per policy statement and had 33 total comments. Participant comments for this principle contained the following key points of feedback, grouped within themes that emerged:

- Some participants commented that the accessibility of services and the ability to find information on the City website needs to be improved.
    - A participant suggested that the City take an inventory of common user experience issues on the City website and create a workplan for making improvements to resolve these issues as part of the DIP implementation.
- Some participants commented that the DIP should explicitly recognize that digital infrastructure will not replace over the counter and phone services, but rather complements these channels.
    - Some participants also suggested that the 'right to analog' access to services, especially for seniors and residents with health challenges, be acknowledged in the DIP.
- Some participants commented that there will need to be a balance in how far government is willing to accommodate all people in a City.
    - A participant commented that effort and funding to provide digital services in different languages should be based on proportionality of the population, rather than an 'all or none approach'.

Equity, Inclusion and Human Rights

Below is the level of support and approval indicated by participants for the policy statements in the Equity, Inclusion and Human Rights policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

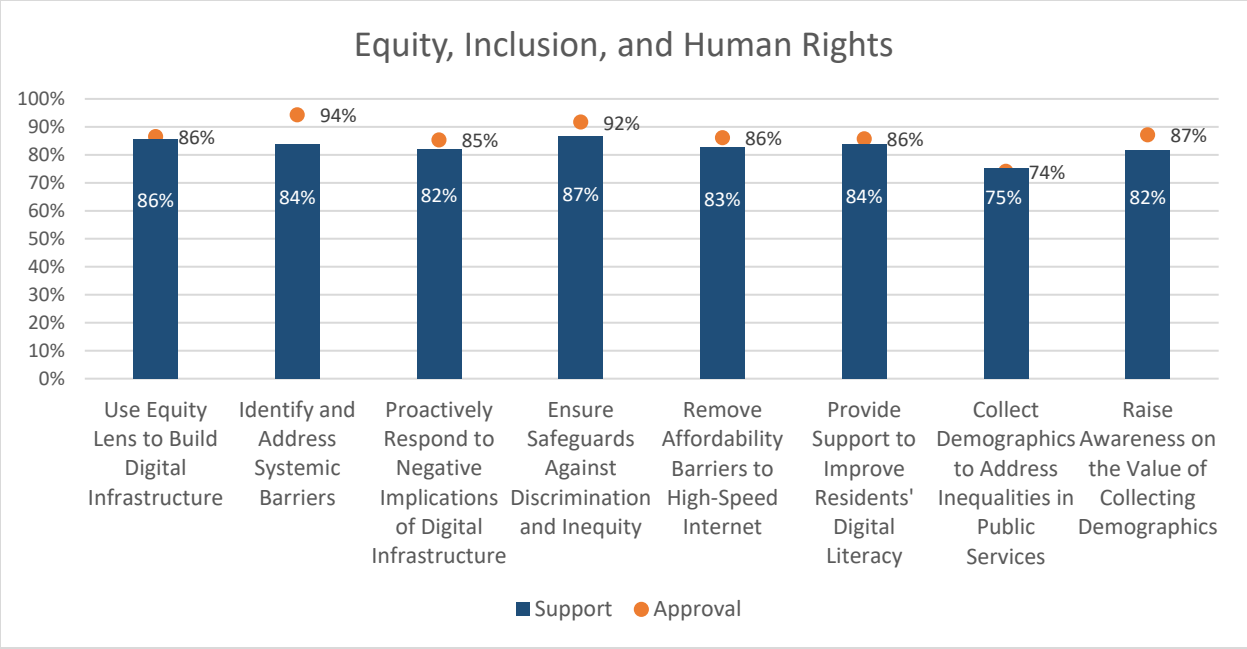

Figure 2: Levels of Support and Approval for the Equity, Inclusion and Human Rights Policy Area

Accessible Digital Infrastructure

Below is the level of support and approval indicated by participants for the policy statements in the Accessible Digital Infrastructure policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

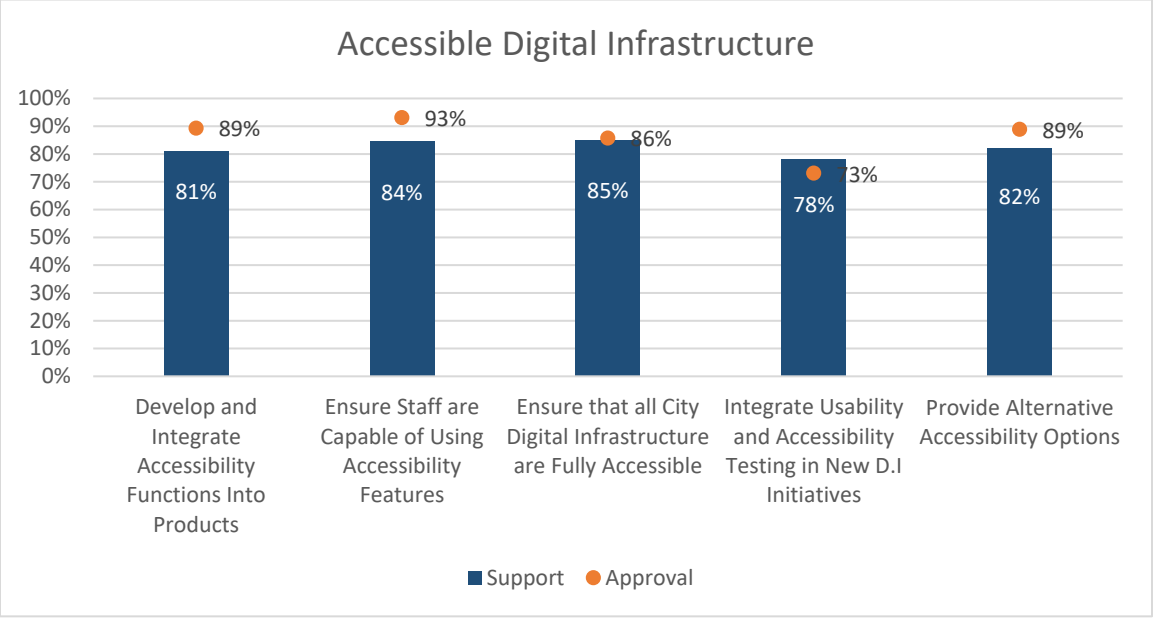

Figure 3: Levels of Support and Approval for the Accessible Digital Infrastructure Policy Area

Responsive Digital Infrastructure

Below is the level of support and approval indicated by participants for the policy statements in the Responsive Digital Infrastructure policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

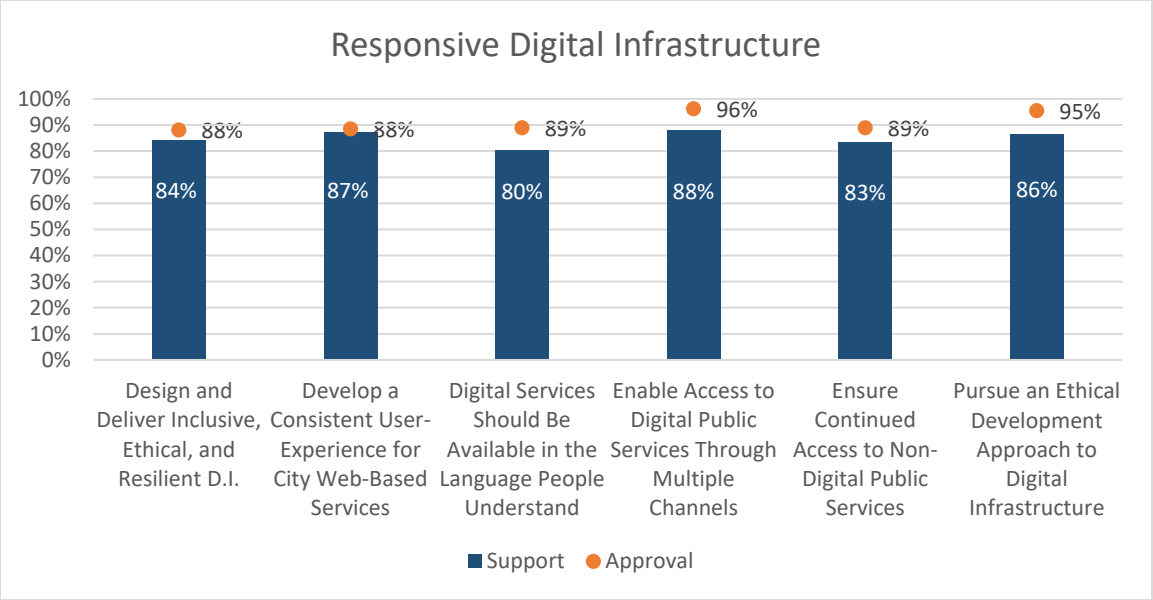

Figure 4: Levels of Support and Approval for the Responsive Digital Infrastructure Policy Area

Well-run City

This principle had a range of 17 to 27 total votes per policy statement and had 26 total comments. Participant comments for this principle contained the following key points of feedback, grouped within themes that emerged:

- Some participants commented that while the use of sensing devices is good, the data should not be locked but rather should be open, transparent, and accessible in real time. Some participants recommended creating a sensor data registry.
    - A participant suggested that the sensor data registry should receive an annual audit that lists the data's uses, the improvements they bring, and any negatives or risks they carry.
- Some participants commented that the City needs to explicitly state what divisions or agencies may have access to data that is collected, and should specifically state who will not have access.
    - A participant shared that there are concerns in the community that data collected by health clinics could be shared with immigration officials or Toronto Police Service, led to COVID-19 vaccine outreach being hindered. They recommended that the City be more clear who the data will not be shared with.
- Some participants recommended that there be more opportunities for residents to share feedback with the City on digital infrastructure, for example by including feedback buttons on every website page, and proactively conducting focus groups on user experience.

Digital Transformation

Below is the level of support and approval indicated by participants for the policy statements in the Digital Transformation policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

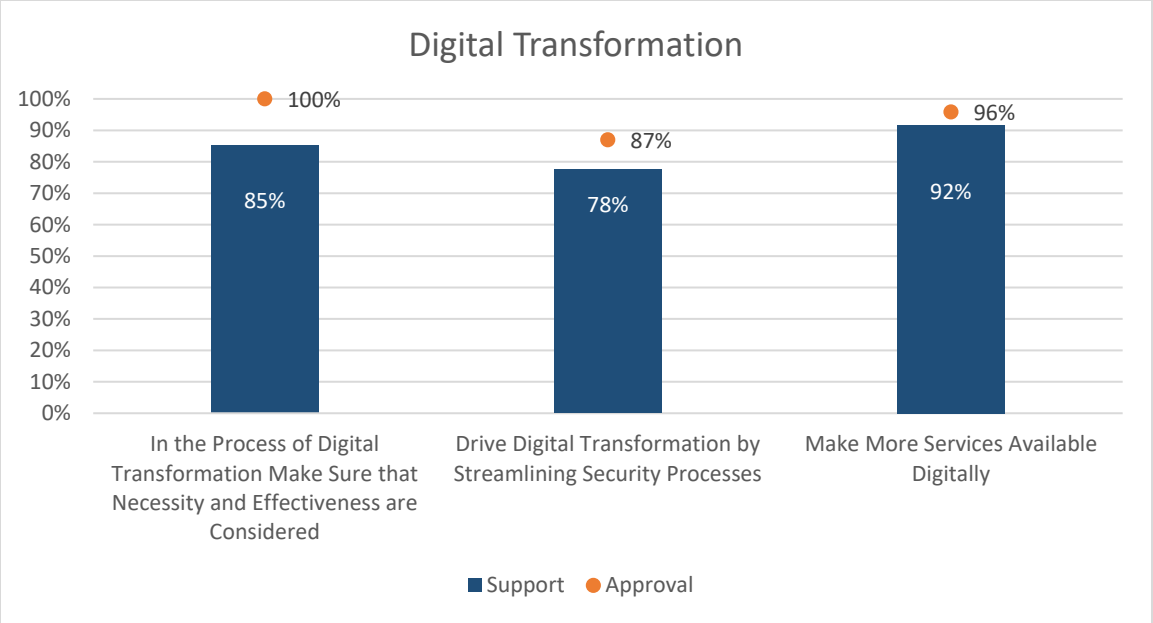

Figure 5: Levels of Support and Approval for the Digital Transformation Policy Area

Data Governance

Below is the level of support and approval indicated by participants for the policy statements in the Data Governance policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

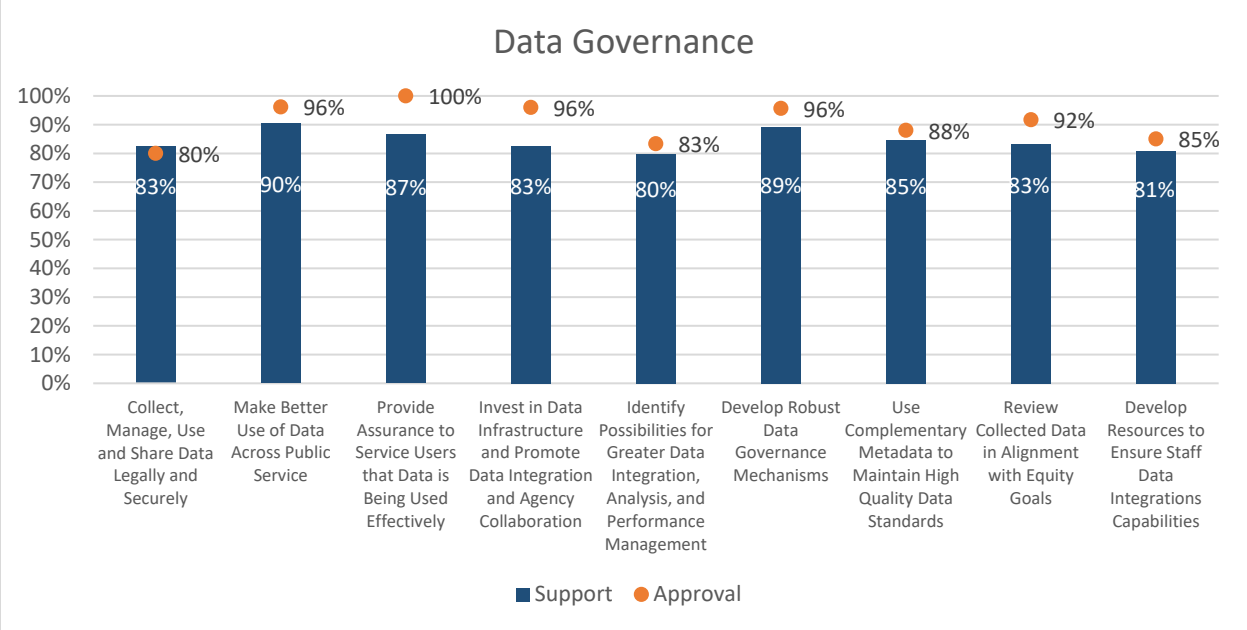

Figure 6: Levels of Support and Approval for the Data Governance Policy Area

Asset Management

Below is the level of support and approval indicated by participants for the policy statements in the Asset Management policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

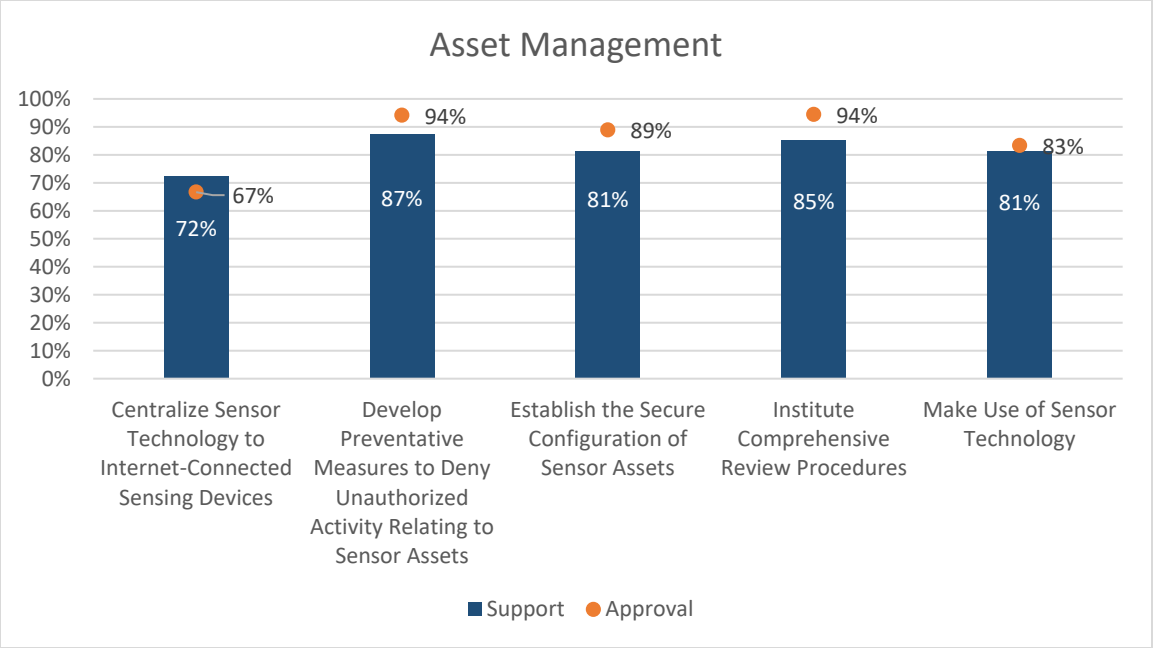

Figure 7: Levels of Support and Approval for the Asset Management Policy Area

Toronto as a Connected Community

Below is the level of support and approval indicated by participants for the policy statements in the Toronto as a Connected Community policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

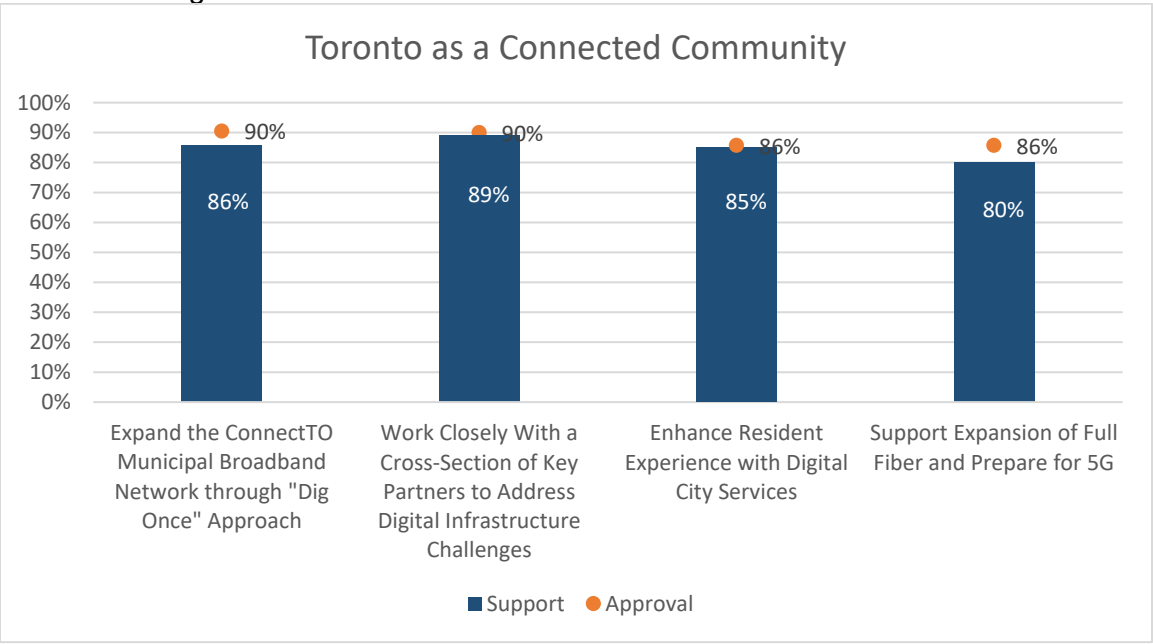

Figure 8: Levels of Support and Approval for the Toronto as a Connected Community Policy Area

Social, Economic, and Environmental Benefits

This principle had a range of 18 to 22 total votes per policy statement and had 16 total comments. Participant comments for this principle contained the following key points of feedback, grouped within themes that emerged:

- Some participants expressed concern about tech procurement with bigger companies, citing the PayIT platform, where public control is lost and there isn't alignment to deliver social benefits.
- Some participants encouraged initiatives that make it easier for entrepreneurs to get started, for example 'one-stop registration' that minimizes any requirements to show up in person to file paperwork and that automates as many approvals as possible.
- Some participants expressed support for increased use of technology by the City to improve energy and waste management, and environmental monitoring.

Social Benefits

Below is the level of support and approval indicated by participants for the policy statements in the Social Benefits policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

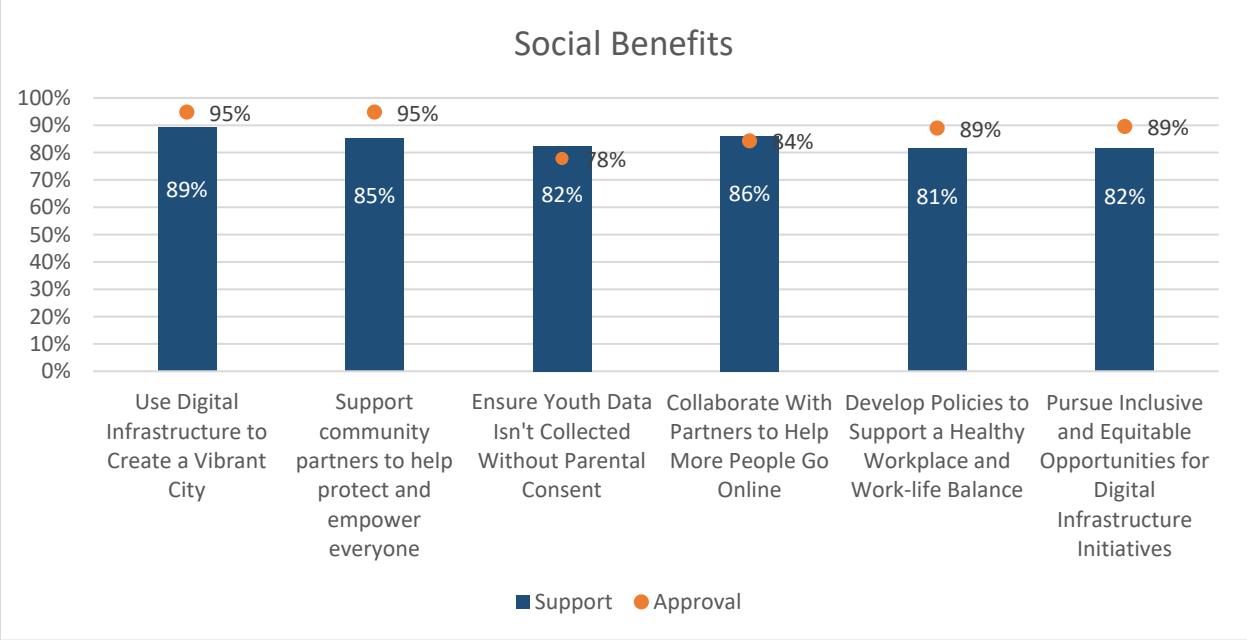

Figure 9: Levels of Support and Approval for the Social Benefits Policy Area

Economic Benefits

Below is the level of support and approval indicated by participants for the policy statements in the Economic Benefits policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

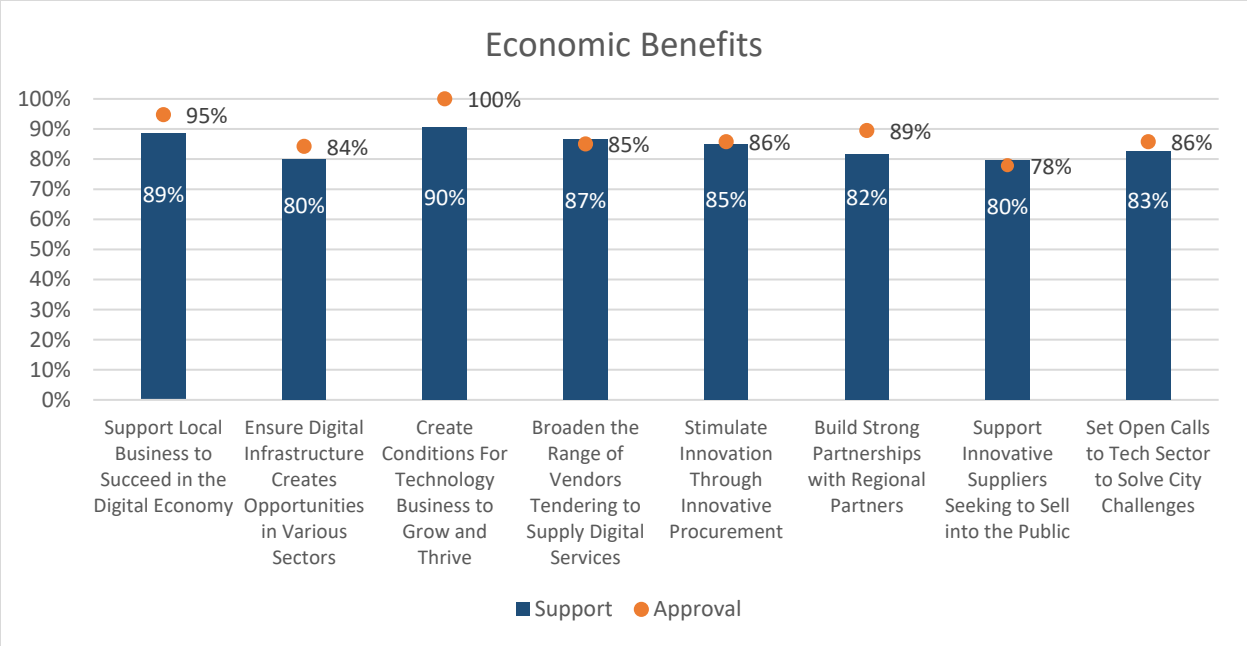

Figure 10: Levels of Support and Approval for the Economic Benefits Policy Area

Environmental Benefits

Below is the level of support and approval indicated by participants for the policy statements in the Environmental Benefits policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

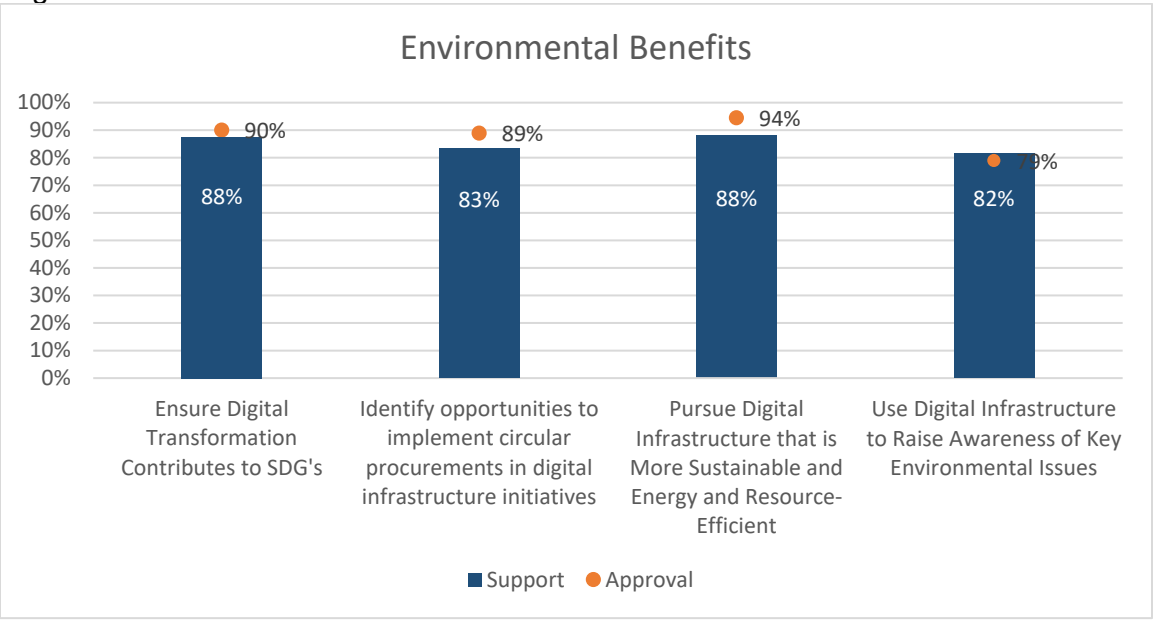

Figure 11: Levels of Support and Approval for the Environmental Benefits Policy Area

Privacy and Security

This principle had a range of 17 to 21 total votes per policy statement and had 21 total comments. Participant comments for this principle contained the following key points of feedback, grouped within themes that emerged:

- Some participants commented that security needs to be approached with a user-focused lens, stating that traditional IT approaches to security can frustrate users and drive them to adopt risky workarounds.
- Some participants cautioned against the practice of associating a user ID with personal information, stating that allowing users the option to have anonymous IDs may result in more people creating identities, sharing their data, and engaging with digital infrastructure.
- Some participants expressed concern that the Privacy Impact Assessment is inadequate for the modern digital landscape, stating that these are usually conducted by policy specialists that lack technical knowledge, and there should be a more participatory process to allow public input in weighing risks against benefits.

Security

Below is the level of support and approval indicated by participants for the policy statements in the Security policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

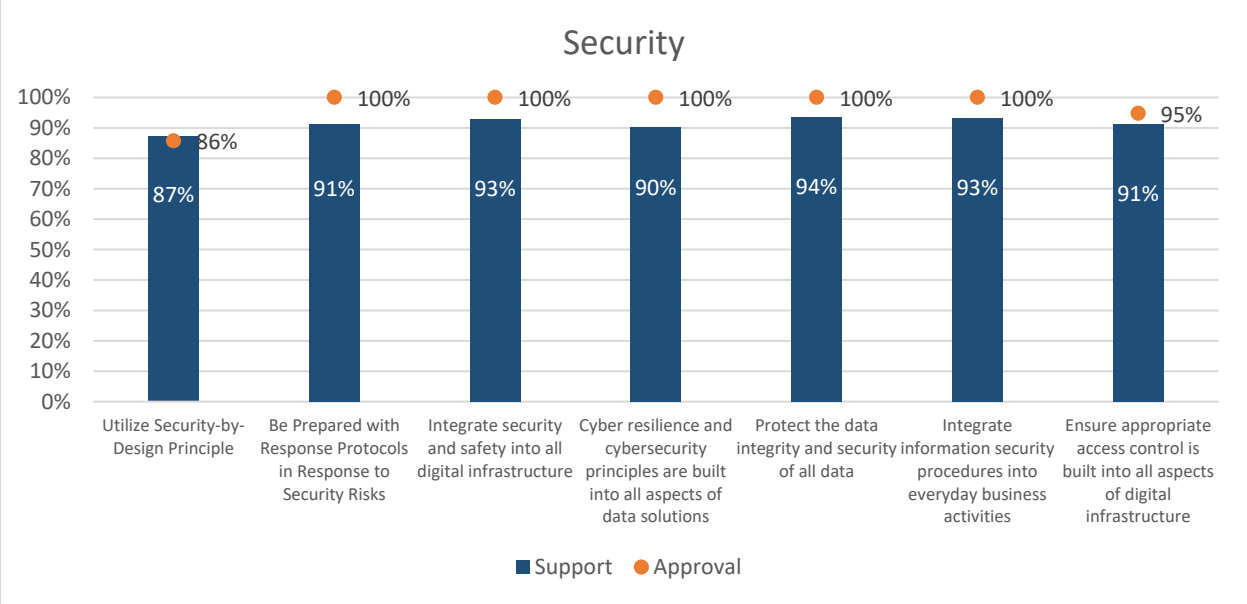

Figure 12: Levels of Support and Approval for the Security Policy Area

Privacy

Below is the level of support and approval indicated by participants for the policy statements in the Privacy policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

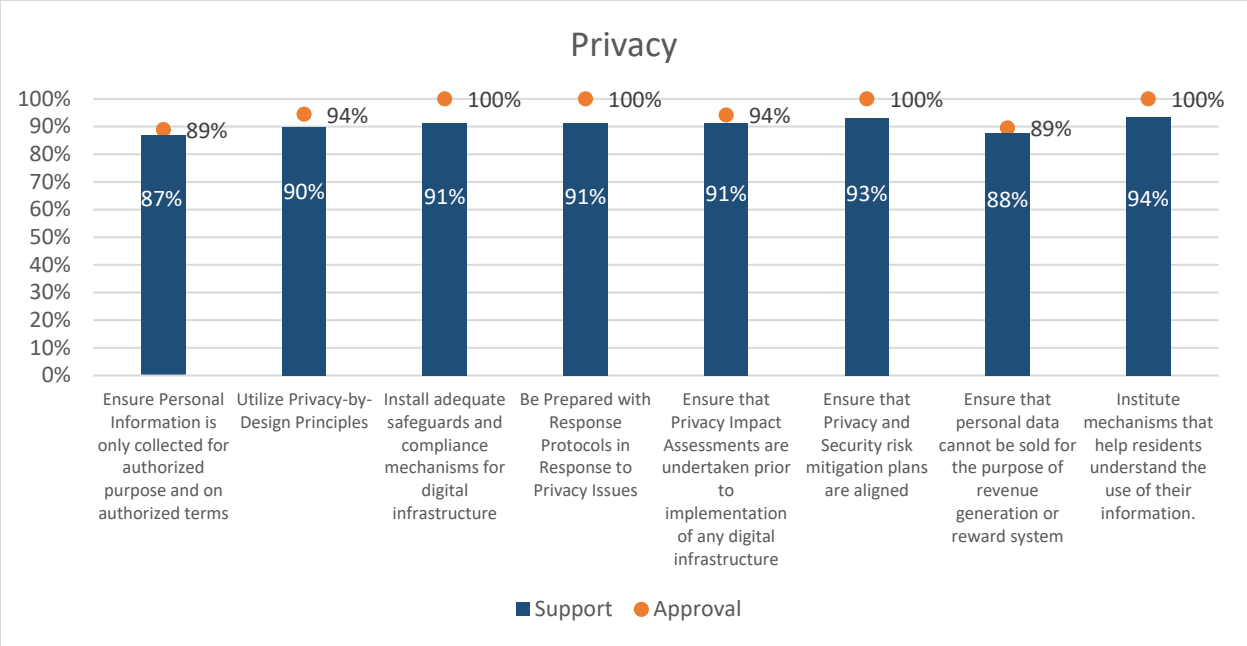

Figure 13: Levels of Support and Approval for the Privacy Policy Area

Consent

Below is the level of support and approval indicated by participants for the policy statements in the Consent policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

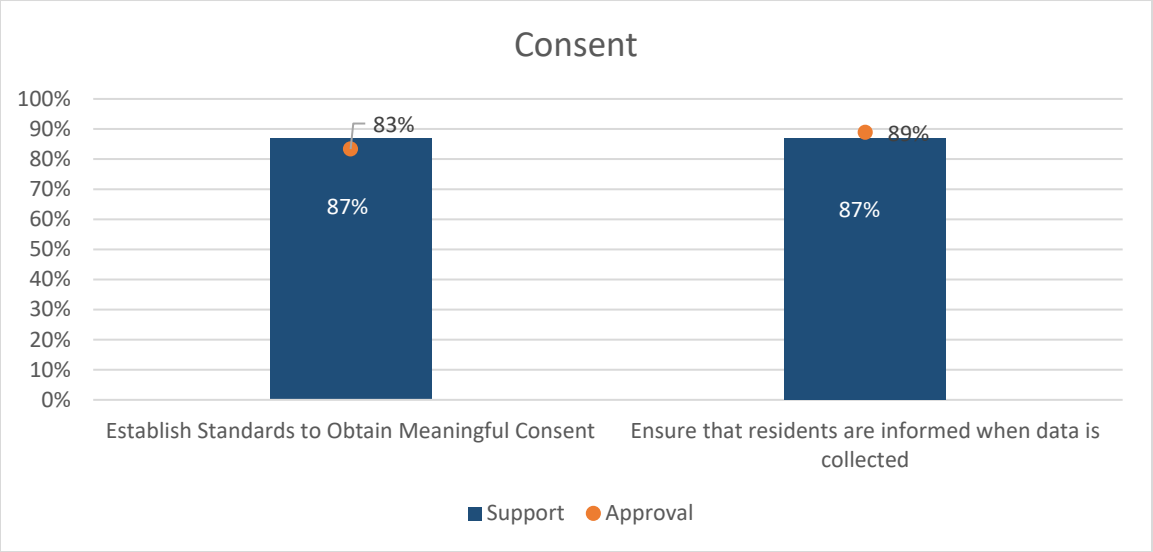

Figure 14: Levels of Support and Approval for the Consent Policy Area

Digital Identity

Below is the level of support and approval indicated by participants for the policy statements in the Digital Identity policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

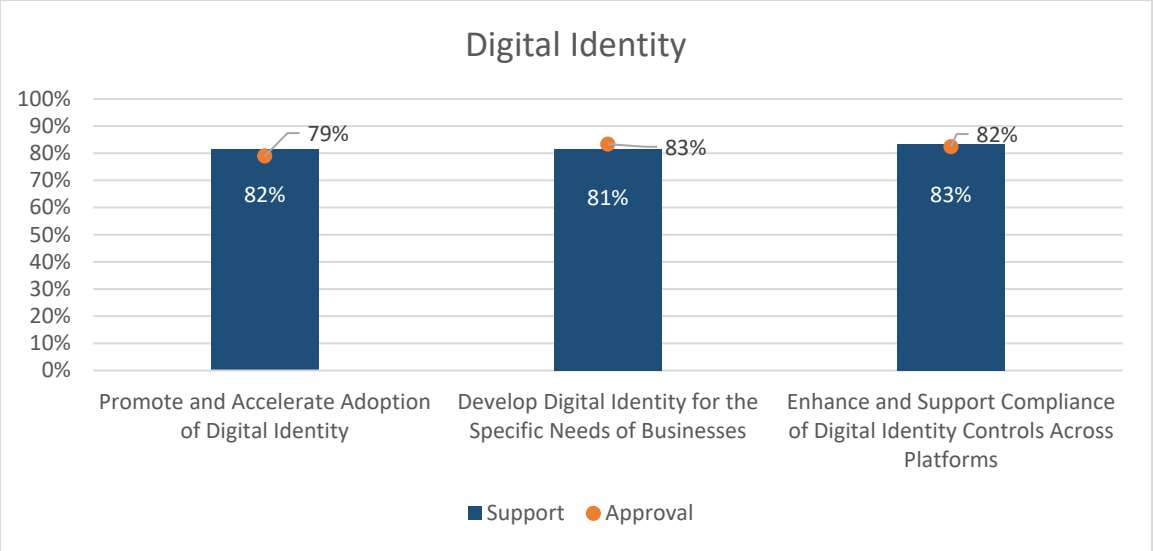

Figure 15: Levels of Support and Approval for the Digital Identity Policy Area

Democracy and Transparency

This principle had a range of 14 to 17 total votes per policy statement and had 29 total comments. Participant comments for this principle contained the following key points of feedback, grouped within themes that emerged:

- Some participants commented that while public consultation is appropriate for gathering input on goals, outcomes, and vision for new technology from highly engaged residents, there needs to be more ethnographic studies, and end-user specific outreach in designing digital services.
    - Some participants suggested that the City should conduct more user research, for example through a civic testing group, to understand needs and evaluate usability.
- Some participants commented on the limitations and frustrations experienced with chatbots and expressed that the City should prioritize improving the quality of basic online services such as accessing information on the city website, over attempting to develop AI.
- Some participants were uncertain about the value of a registry specific to open-source software, suggesting that it might me better to have a registry of all software the city uses, including proprietary software.

Public Consultation and Participation

Below is the level of support and approval indicated by participants for the policy statements in the Public Consultation and Participation policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

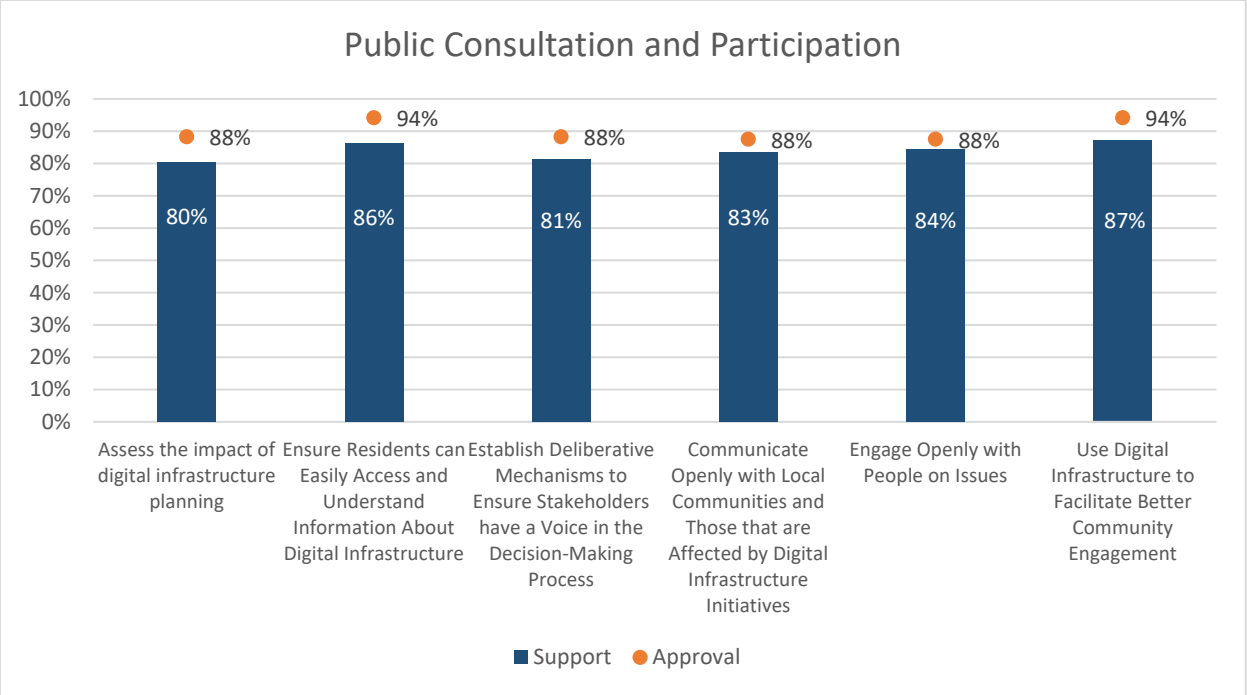

Figure 16: Levels of Support and Approval for the Public Consultation and Participation Policy Area

Access to Information and Transparency

Below is the level of support and approval indicated by participants for the policy statements in the Access to Information and Transparency policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

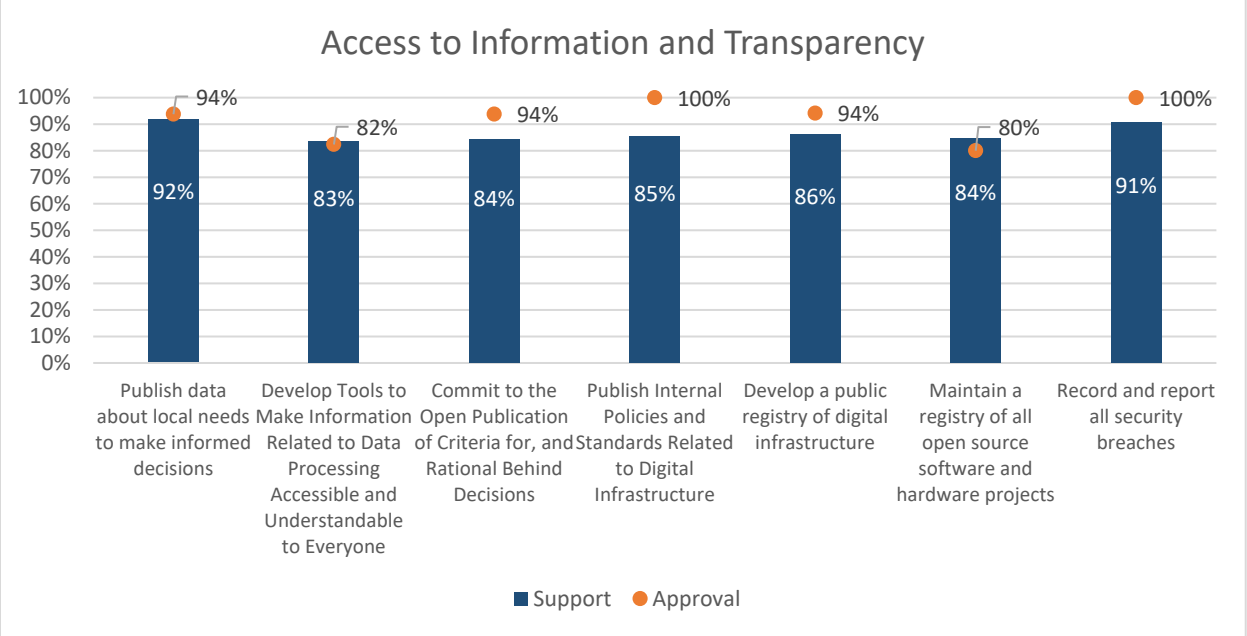

Figure 17: Levels of Support and Approval for the Access to Information and Transparency Policy Area

Open Contracting

Below is the level of support and approval indicated by participants for the policy statements in the Open Contracting policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

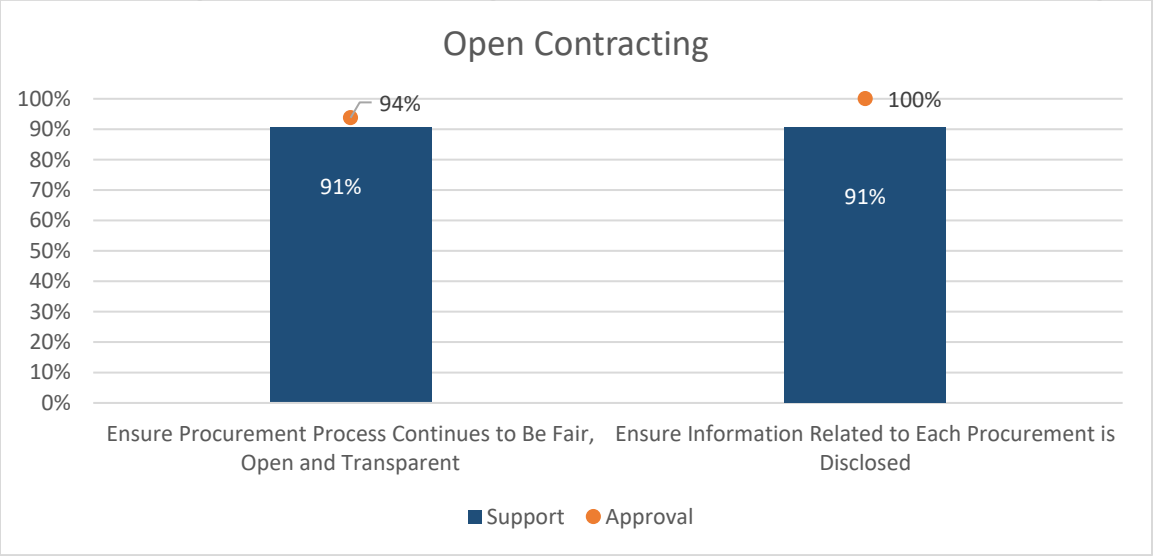

Figure 18: Levels of Support and Approval for the Open Contracting Policy Area

Trust in Digital Government

Below is the level of support and approval indicated by participants for the policy statements in the Trust in Digital Government policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

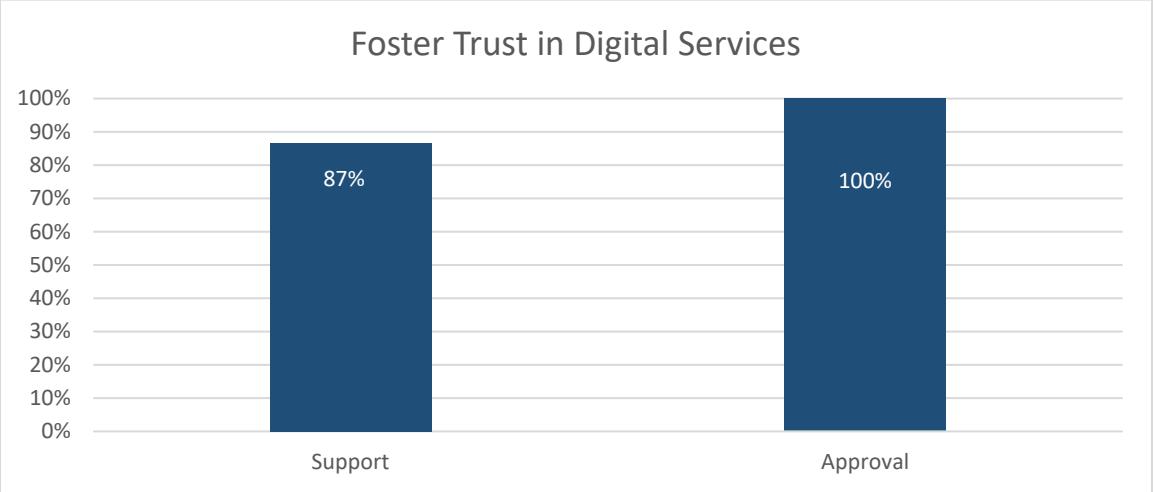

Figure 19: Levels of Support and Approval for the Trust in Digital Government Policy Area

Algorithmic Transparency and Responsibility

Below is the level of support and approval indicated by participants for the policy statements in the Algorithmic Transparency and Responsibility policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

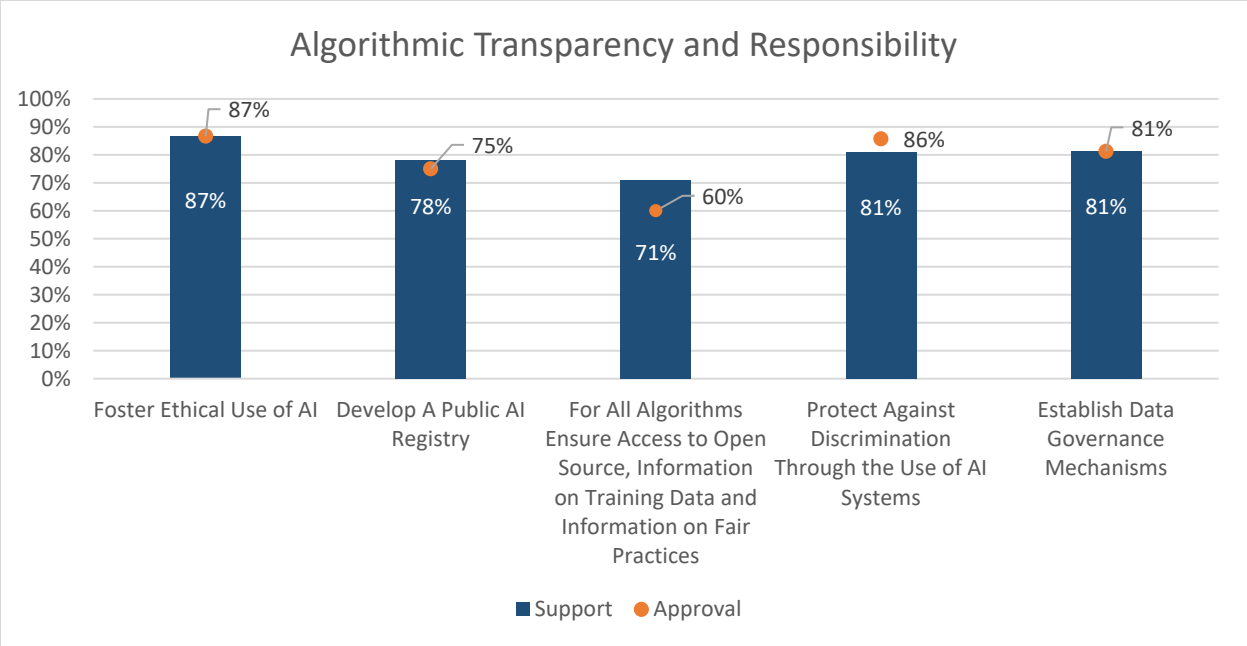

Figure 20: Levels of Support and Approval for the Algorithmic Transparency and Responsibility Policy Area

Digital Autonomy

This principle had a range of 10 to 18 total votes per policy statement and had 29 total comments. Participant comments for this principle contained the following key points of feedback, grouped within themes that emerged:

- Some participants expressed concern with the City's internal capacity to develop and maintain software using open-source code.
    - Some participants suggested that in-house development should focus on the integration of well-established open-source software tools rather than developing from the ground-up, and in collaborating on developing open-source code with other governments.
- Some participants commented that the City should invest in building its own internal digital capacity to avoid 'vendor-lock-in'.
    - A participant commented that technological autonomy doesn't mean that the City needs to own every platform and piece of infrastructure, but rather that the City has the internal competencies to evaluate technology choices and make needed changes.
- Some participants emphasized the importance of transparency so that it's easy for the public to track what decisions are being made.

Open Source Software

Below is the level of support and approval indicated by participants for the policy statements in the Open Source Software policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

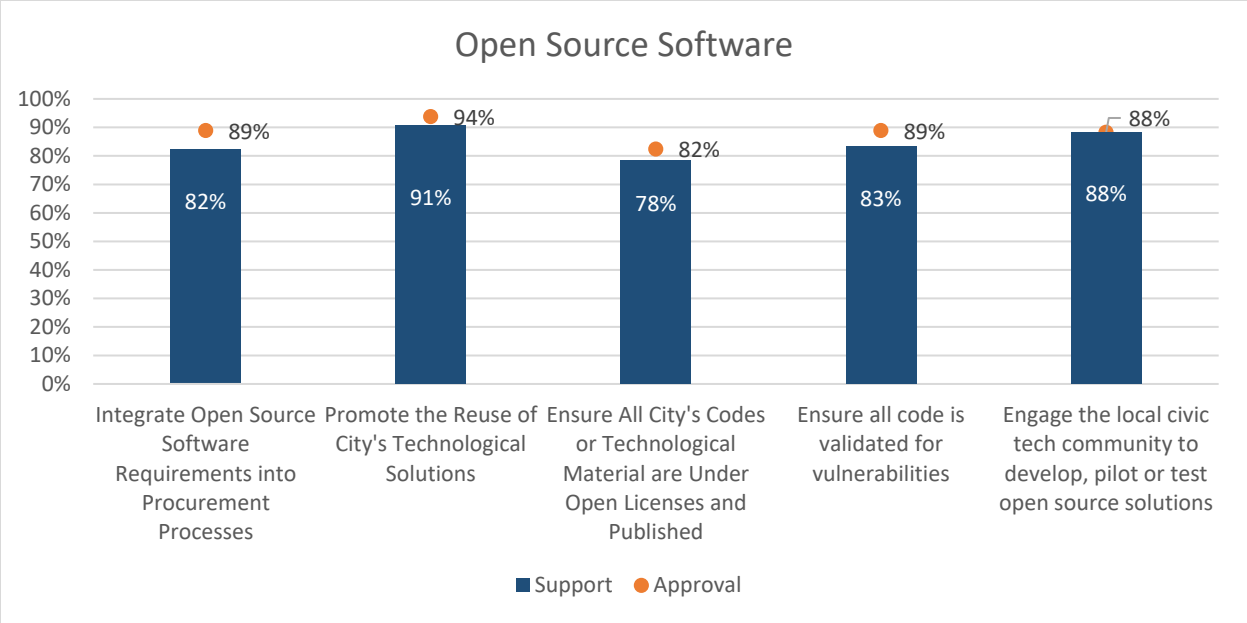

Figure 21: Levels of Support and Approval for the Open Source Software Policy Area

Intellectual Property

Below is the level of support and approval indicated by participants for the policy statements in the Intellectual Property policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

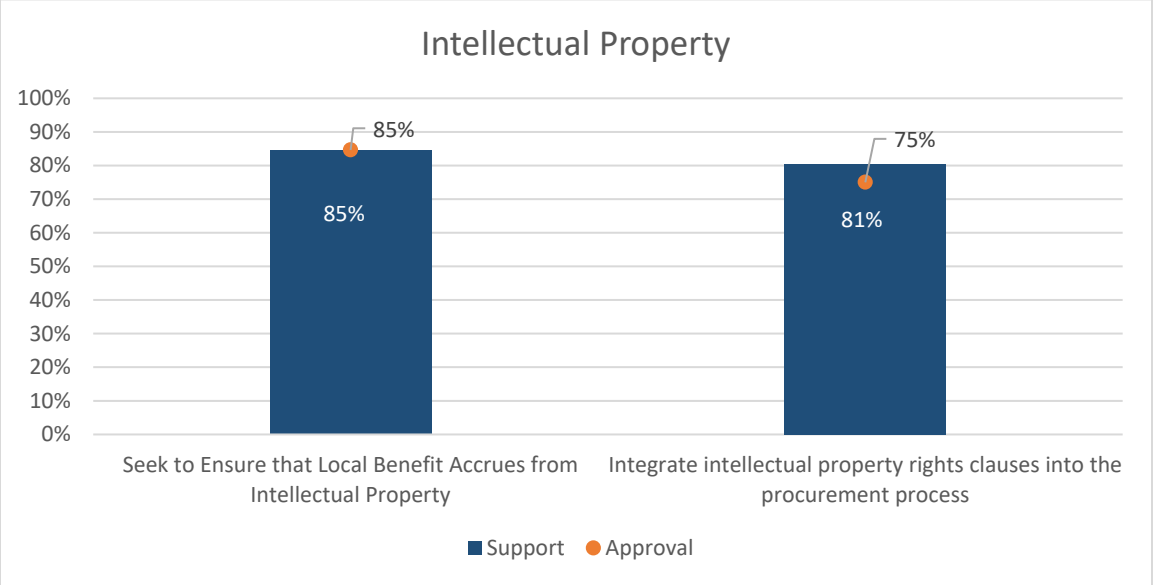

Figure 22: Levels of Support and Approval for the Intellectual Property Policy Area

Open Standards and Interoperability

Below is the level of support and approval indicated by participants for the policy statements in the Open Standards and Interoperability policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

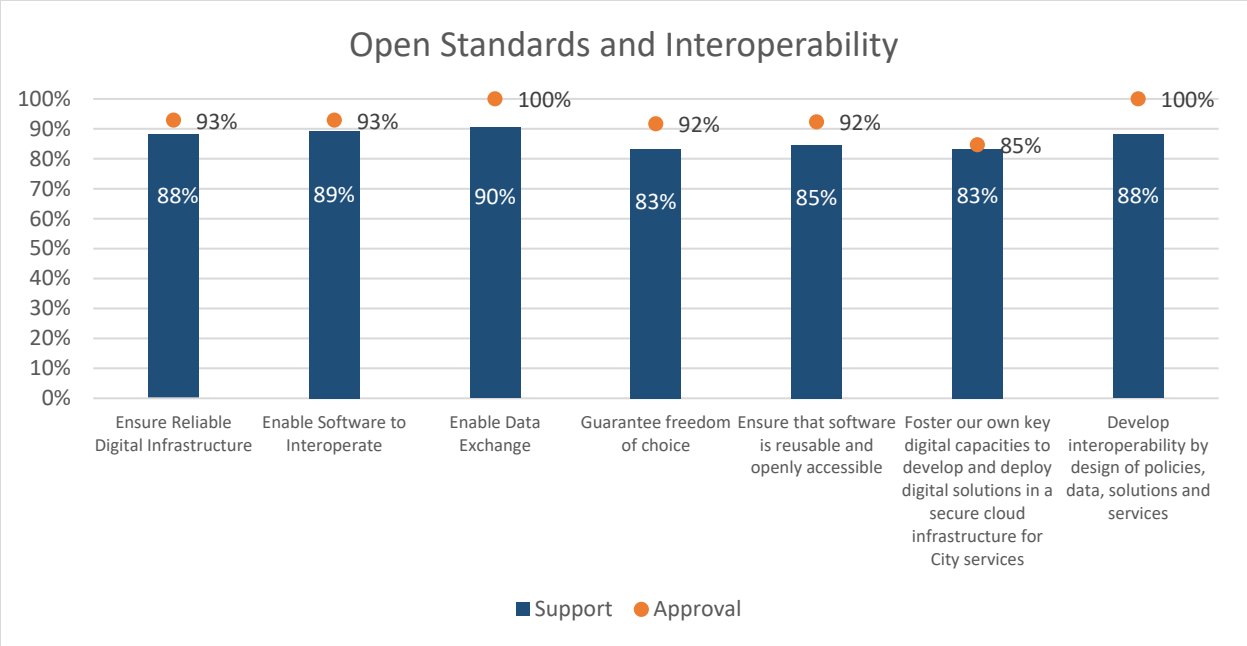

Figure 23: Levels of Support and Approval for the Open Standards and Interoperability Policy Area

Data Residency in Canada

Below is the level of support and approval indicated by participants for the policy statements in the Data Residency in Canada policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

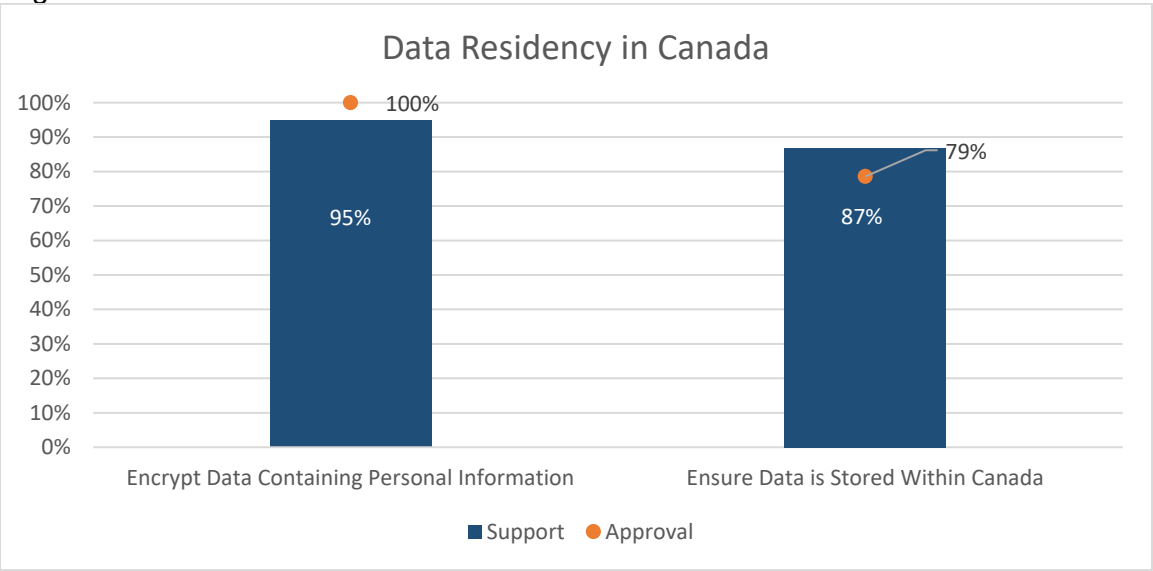

Figure 24: Levels of Support and Approval for the Data Residency in Canada Policy Area

Maintenance and Repair

Below is the level of support and approval indicated by participants for the policy statements in the Maintenance and Repair policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

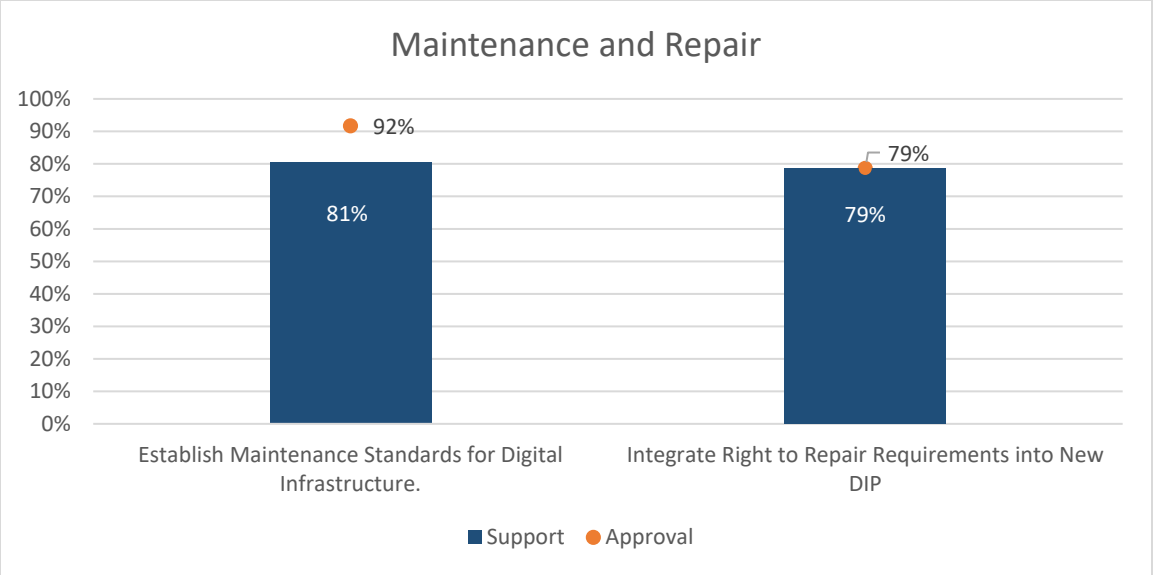

Figure 25: Levels of Support and Approval for the Maintenance and Repair Policy Area

Control

Below is the level of support and approval indicated by participants for the policy statements in the Control policy area. Support is the average value of the responses, and approval is the percentage of participants who gave a positive vote rather than a neutral or negative vote.

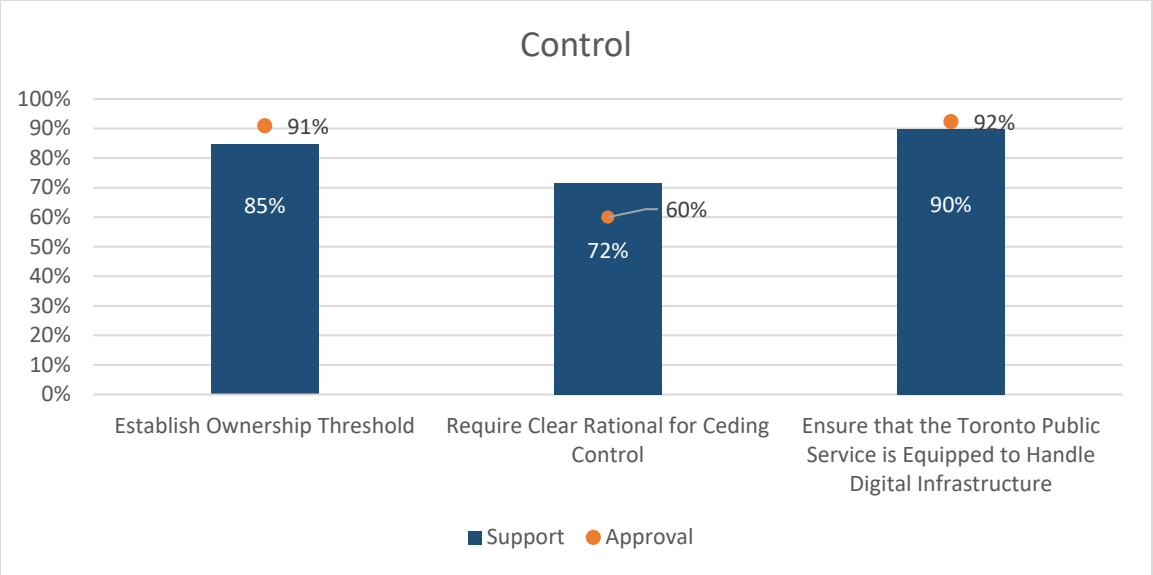

Figure 26: Levels of Support and Approval for the Control Policy Area

Appendix C: DIP CAG Meetings Summary

The following is a non-verbatim summary of the virtual DIP CAG meetings held on September 14 and November 1, 2021.

September 14, 2021 Meeting

Meeting Overview

The fourth Community Advisory Group (CAG) meeting was held on September 14, 2021 from 4:00pm to 6:00pm via Webex. 12 of 23 members were in attendance.

The meeting was called to order by James Knott, LURA Consulting. Lawrence Eta, Chief Technology Officer, City of Toronto welcomed everyone and thanked them for attending. Lawrence also gave a land acknowledgement. James then facilitated a round of participant introductions and provided a meeting overview.

James Knott continued the meeting by asking CAG members for approval of the minutes from the previous meeting. CAG members were given the opportunity to comment on or revise the Meeting 3 summary. There was only one point of feedback. A CAG member noted that the summary uses the word ‘members’ when describing agreement on a point; and suggested this be changed to ‘some members,’ so that it does not imply that all CAG members agreed.

Hamish Goodwin, Management Consultant, City of Toronto then provided a recap of the Digital Autonomy consultations that happened in June and July 2021, reporting that most participants agreed with adding Digital Autonomy as a sixth principle of the Digital Infrastructure Plan (DIP), and were supportive of the policy areas that were proposed. Hamish stated that the project team has incorporated feedback from the Digital Autonomy consultations into the DIP content, and that a summary report of this consultation will be posted on the DIP website.

This was followed by two presentations and break-out group discussions summarized below.

Presentation: DIP Content Overview

Nabeel Ahmed, Management Consultant, City of Toronto delivered the first presentation in two parts. In the first part, Nabeel provided a review of the DIP’s scope, intent, and structure. Nabeel noted that in consultations with internal City divisions, the project team is hearing broad recognition that an overarching plan like the DIP is needed to guide decision making on data and technology in a cohesive way. In the second part, Nabeel, reviewed the DIP’s six guiding principles and their corresponding policy areas, and described the intent behind each principle’s group of policy statements.

Following this presentation, James Knott facilitated a Q&A session for CAG members to ask questions of clarification. Hamish Goodwin, Nabeel Ahmed, and Lawrence Eta answered the following questions:

Questions are marked by a ‘Q’, answers are marked with an ‘A’ and comments are marked with a ‘C’.

Q: What does the City understand as the benefits or successes of digital infrastructure, specifically what conditions are being sought? This is related to the content on the Social, Economic, and Environmental Benefits slide.

A: The City does not have a definition for benefits, as this principle is meant to guide City staff on seeking benefits, rather than prescribe specific objectives. The policy areas for this principle are very broad – covering social, economic, and environmental benefits – but the policy statements demonstrate how staff should seek benefits when they are developing, procuring, or implementing digital infrastructure.

C: I have stated on many occasions that the Principle heading needs to address benefits and avoidance of harms.

Q: How does this search for benefits work in practice? How do you test for accuracy that the claimed benefits are likely to occur?

A: There is a section in the DIP on monitoring and performance management. We've also included specific language in a different principle regarding the need to identify and consider potential harms that may result and minimize them. The DIP would provide a clear framework that all divisions of the City would have to demonstrate compliance with. For example, if someone is not following the accessibility policy, there is a monitoring process at the city that will account for this.

Q: Will the monitoring process be able to detect if harms are produced?

A: It is difficult to say whether every possible harm can be detected, but as outlined in the Democracy and Transparency principle, if the monitoring process reveals that there are harms that are resulting, this would be transparent and not hidden from the public. The public would then have the chance to engage on those findings.

Q: What is the nature of oversight suggested in Democracy and Transparency?

A: The DIP fits within the existing bureaucratic processes at the City. Part of the oversight will come in implementation by feeding new policies into those existing oversight processes. In addition to that, there are recommendations in the DIP around transparency that are intended to provide significantly more oversight.

Q: Can you provide substantiation on your imagined sets of procedures that assure citizens the opportunity to shape the digital domain? What ideas for having democratic engagement in this process have you been considering?

A: Our thinking on this is primarily related to greater public consultation on decision making related to digital infrastructure. Right now, there are no frameworks or thresholds in terms of what would trigger a public consultation and what would not. So, these are issues we are looking to tease out in this consultation. Discussing the future of the CAG is also part of answering that question.

Presentation: DIP Consultation Process

Hamish Goodwin delivered the second presentation which provided an overview of the DIP consultation process. This included a review of the consultation approach and timeline, the consultation formats which include two virtual public meetings and drop-in sessions, the scope

of feedback the project team is seeking, upcoming stakeholder meetings, and a demo of Ethelo, the online platform that the public can use to review and provide feedback on the DIP content.

Hamish stated that after further refinements to the DIP based on the public consultation feedback, the project team plans to deliver a staff report to Executive Committee in December 2021 or January 2022. Hamish also noted that the DIP is designed as a living document that will change over time, requiring additional consultations in the future.

Following this presentation, James Knott invited CAG members to ask questions of clarification. There were no questions.

Breakout Discussions

James Knott introduced the breakout discussions and directed CAG members on how to participate in their breakout session. CAG members were separated into three groups. Every group was asked to provide feedback on the proposed public consultation approach, the Ethelo platform, and additional groups the City should be consulting.

Each breakout group was then assigned two of the DIP principles and discussed the content and corresponding policy approaches.

Following the breakout sessions, CAG members were invited to submit additional feedback to the project team, recognizing that CAG members may have feedback on the four DIP principles that they did not discuss in their breakout group.

Public Consultation Approach

Feedback from the breakout discussions is included as follows and is organized by feedback related to the content being presented to the public, the Ethelo online engagement platform, and the City's approach in engaging with the public.

Content

- Some members noted that it is important to include tangible examples of digital infrastructure that the public is familiar with (e.g., Waste Wizard), and to reduce and simplify presentation content where possible.
- A member suggested that the City publish a full list of key themes from the public comments received, with responses on how this feedback has been addressed.
- A member suggested that the definition of digital infrastructure be expanded and be refined, so that it is clearer that emerging digital applications and services such as digital ID, digital payment, and vaccine passports are included in the definition.

Ethelo Platform

- Some members expressed concern that the engagement is too long and that most participants will not finish.
    - Suggestion that the presentation order of the content be randomized so that the feedback received is evenly distributed.
- Some members noted that the content may be taxing on people who are not experts in the area, and that participation may be easier when done with a group.
    - Suggestion to partner with community groups that can provide facilitation and help participants work through the content on Ethelo in a group setting.
- Some members noted that the call-out buttons for definitions should stand out more and suggested that more contrast should be added.

- Some members recommended that the project team consider adding more explainer text and, where possible, navigation buttons to improve user experience:
    - Suggestion to add “Submit” or “Next Section” button to the right-hand side panel.
    - Suggestion to add “Search” function for participants to find terms of interest.
    - Suggestion to include statement upfront that full completion is not necessary, and to make clear that participants can skip ahead to areas of most interest to them.
    - Suggestion to add an overview page with links to specific sections, and an option to view and print a full DIP summary as a PDF.

Engagement Approach

- Some members noted that it may be a challenge to orient the public to digital infrastructure and suggested that the City apply engagement practices that the public is familiar with for physical infrastructure to this process.
- Some members were concerned that the opportunities for public engagement are not enough and recommended increasing the number of public meetings and drop-in sessions.
- A member recommended that the project team engage TDSB or teachers to get feedback from that sector.
- A member recommended that the project team engage more research institutions and experts, and specifically suggested Schwartz Reisman Institute of Technology and Society and University of Toronto School of Cities.
- Some members were concerned that the current list of community and stakeholder groups being engaged is not representative of the City’s diversity.
- A member recommended that the project team engage food banks and food agencies to better reach equity-deserving groups.
- Some members suggested that the project team can improve its outreach by creating a journey map on how the DIP can help equity-deserving groups of interest. They also recommended that ‘community gatekeepers’ such as community hubs be prioritized for posters and outreach, that digestible chapters with policies of most interest be shared, and that options for accessing consultation by telephone be promoted.

Feedback from the breakout discussions is included as follows and is organized by DIP principle.

Equity & Inclusion

- A member suggested that the City’s definition of ‘equity deserving groups’ be provided in this principle.
- A member was curious whether the City will be considering seniors under this policy area.
- A member suggested changing the language about implementation of this principle so that it is framed as a collective approach, as opposed to what the City will do. This will help enable equity deserving groups to provide meaningful guidance on implementation.
- A member suggested adding a point that this is a living document, and that the DIP does not take a static lens on equity.

Well-Run City

- A member suggested that more specific language be used in the Digital Transformation policy statement about validating the effectiveness of a proposed digital solution.

- Suggested changing ‘demonstrate the effectiveness’ to say, ‘develop a standard evaluation method’.

Social, Economic, and Environmental Benefits

- A member suggested that the term ‘benefits’ be replaced by ‘impacts’ or be expanded to say ‘benefits and harms’.
- Some members suggested adding more specific indicators and measures for impacts (inclusive of benefits and harms), based on what is used by other City divisions that service those areas.
- A member suggested that the Environmental Benefits policy area include a full life-cycle analysis of increased resource use associated with adopting new digital infrastructure, with the intention of minimizing this impact.
- A member noted that while arts and culture is represented in the Economic Benefits policy area, it should also be framed as a factor in the Social Benefits policy area.
- Some members noted that the policy statement “minimizing printing where possible” is too specific and recommended that the framing should be broader to include other actions that can reduce the carbon footprint from day-to-day operations.

Privacy & Security

- A member suggested adding a policy statement that directs the City to invest in the most advanced technology available for protecting security.
- A member was curious about how the City can support protecting residents’ digital identity beyond the City’s digital infrastructure. The member suggested that the City could engage in partnerships and advocacy to strengthen privacy and security in digital realms more globally.
- A member suggested incorporating concepts of ‘digital human rights’, and that the language in the Privacy policy area can be made more user-friendly. They noted that terms such as ‘privacy-by-design’ may not be understood.

Democracy & Transparency

- A member recommended changing the ‘have a voice’ wording to something more specific.
- A member asked whether the policies in this principle will support residents to participate in the City’s wider democratic process. They noted that City Council is using digital spaces to meet and wondered what opportunities there will be for residents to participate in those forums.

Digital Autonomy

- A member suggested that the DIP should be transparent that it represents aspirational goals and not commitments, and that there may be trade-offs with competing goals.
- Some members wanted more details on how policies would be turned into concrete procurement processes, noting that there is a general reliance on proprietary services in procurement contracts, as opposed to open source.
- A member noted that this principle implies autonomy to the City, whereas the trend is to give consumers the power to determine who they share their data with.
- A member was encouraged to see a policy statement on engaging the local civic technology community but noted that this would require a substantial commitment to growing those relationships and supporting those communities.

- A member noted that any request for 'Personal Identifiable Information' should require explicit consent and should inform people why their information is being used.

November 1, 2021 Meeting

Meeting Overview

The fifth Community Advisory Group (CAG) meeting was held on November 1, 2021, from 4:00pm to 6:00pm via WebEx. 11 of 23 members were in attendance.

The meeting was called to order by James Knott, LURA Consulting. Lawrence Eta, Chief Technology Officer, City of Toronto welcomed everyone and thanked them for attending. Lawrence also gave a land acknowledgement. James then facilitated a round of participant introductions and provided a meeting overview.

James Knott continued the meeting by asking CAG members for approval of the minutes from the previous meeting. CAG members were given the opportunity to comment on or revise the Meeting 4 summary. No comments were received on the meeting summary.

This was followed by two presentations and discussions summarized below.

Presentation: DIP Implementation & Future of the CAG

Hamish Goodwin, Management Consultant, City of Toronto delivered the first presentation which reviewed considerations for a new DIP Public Advisory Body (PAB) for the City of Toronto as part of DIP implementation. This included a review of the current CAG's role and membership, the purpose of the PAB, and how the PAB would be administered.

Following this presentation, CAG members were encouraged to ask questions of clarification and share feedback on a series of questions posed by the DIP project team on considerations for the PAB. Hamish Goodwin and Nabeel Ahmed, Management Consultant, City of Toronto answered the following questions.

Questions are marked by a 'Q', answers are marked with an 'A', comments are marked with a 'C', and responses to comments are marked with a 'R'.

DIP PAB Purpose

Q: **Would staff from other City departments ask questions on the DIP directly to the PAB, or would their questions go through the DIP project team. Would the PAB advise on issues within DIP policies or through the lens of DIP policies?**

A: Who approaches the PAB would depend on the originating division of the project in question. If the project originates with the Technology Services Division (TSD), then the TSD project team would bring the question to the PAB, but if it originates with another division then that division would ask the question. The frequency of meetings would also influence this. For example, if the PAB meets monthly then different types of questions could come to the PAB than if it met quarterly. The PAB would advise on issues based on the DIP policies.

C: It would be better to have targeted sessions that are responsive to project needs, than to have sessions that are based on a quarterly or monthly frequency.

C: I did not have enough information to prepare or review prior to the CAG meetings. Having more material before PAB meetings would allow members to contribute more.

More details and guidance regarding accountability measures, budget, and what is on the table to influence are needed for an advisory body to be helpful.

C: A confidentiality agreement may not be appropriate for this type of committee.

C: I am most concerned about the DIP lacking accountability. Without a budget allocated for implementation, it is hard to have confidence in the plan.

C: It should not be the role of volunteers in an advisory body to provide accountability to the process. This should be the role of paid staff from the City.

R: The purpose of the advisory body would be for the public to provide input in a structured way, but the advisory body is not a substitute for City staff doing their jobs. City staff would be responsible for conducting reviews that provide accountability to the DIP.

C: Advisory bodies like this can be used by the City to get an 'okay' on things where there is not really an opportunity for the group to have an impact. The City of Toronto should consider whether an advisory group would be needed if there is not an opportunity for the advisory group to influence decisions.

DIP PAB Membership

C: The size of the CAG is the right number, but there is no need for smaller breakout discussions during meetings of an already small group. Breakout sessions should be used sparingly, and instead subcommittees can be formed to have more in-depth discussion on a topic.

C: There needs to be a clear scope on what the advisory body is giving advice on. This scope should shape how the advisory body is structured.

C: Consider if PAB meetings can be open meetings where members of the public can attend and comment on items on the agenda.

C: PAB membership should be selected to represent a wide range of views, with both technical and non-technical experts included. Technical experts tend to focus on mitigating concerns, but it is important to also have representation from people who are comfortable questioning whether technology should be implemented.

C: The PAB should be a representative body of the city, and it should not be technology led.

C: The PAB should include technical and non-technical climate expertise, given the increasing importance of climate and clean technology in cities.

C: PAB membership can be selected to include both technical and non-technical backgrounds in the different DIP policy areas.

Time Commitment and Honorarium

C: The time commitment should depend on the scope of work of the PAB.

C: The City of Toronto should provide an honorarium to PAB members. Receiving this compensation may be necessary for some PAB members to participate given the considerable time commitment required to review background materials.

C: Providing an honorarium may help the City of Toronto feel more comfortable with sharing more detailed content knowing that the people receiving it are being compensated to review it.

C: The time commitment for PAB should be at least a two-year term because one year may be too short for members to get familiar with the content and role. The two-year terms can be staggered so that when there is member turnover at the end of a term, there are other members that are staying on.

Presentation: Consultation Feedback

Nabeel Ahmed, Management Consultant, City of Toronto delivered the second presentation which provided an overview of the feedback received from public consultations. This was followed by a review of the common themes that came up in the public consultations including digital inclusion, reconciliation, implementation, and the phrasing of the "social, environmental, and economic benefits" principle. Both the public feedback and how the City of Toronto can respond to this feedback were discussed in the review of each theme.

Following the presentation of each theme, CAG members were encouraged to provide their feedback and ask questions of clarification. Hamish Goodwin, Nabeel Ahmed, and Alice Xu, Manager, Connected Community, City of Toronto answered the following questions. Questions are marked by a 'Q', answers are marked with an 'A' and comments are marked with a 'C'.

Digital Inclusion

C: Providing non-digital service delivery is important for accessibility.

Q: **Is it not already the duty of all governments to ensure that their services are delivered in a manner that is accessible?**

A: The City of Toronto is responsible for ensuring accessibility, but in practice it may be the case that some aspects aren't fully accessible to everyone with accessibility challenges. For example, a webpage or document may pass an accessibility test for persons with visual impairments, but accessibility challenges could potentially still remain for persons with audio / hearing impairments. This is what the DIP wants to address and try to improve in practice.

C: It is important to ensure that the wording of digital inclusion does not frame it as a new idea or solution but acknowledges that the DIP is trying to address legacy problems.

C: Digital inclusion should not just be a matter of access to services but should also promote access to leisure and culture through digital technology.

Q: **Is there any report that confirms that the City of Toronto is compliant with the Province of Ontario's AODA guidelines? This information should be broadcasted more publicly.**

A: The City of Toronto's public website is compliant with AODA, but the City of Toronto is still working on making its internal website (intranet) compliant.

(A link was shared in the chat about the City's Multi-Year Accessibility Plan. This Plan outlines outcomes and initiatives that reaffirm the City of Toronto's commitment to an accessible city and to building an equitable and inclusive society that values the contributions of people with disabilities. The City is required to post a status report on

progress to implement the Accessibility Plan: https://www.toronto.ca/city-government/accessibility-human-rights/accessibility-at-the-city-of-toronto/multi-year-accessibility-plan/)

Reconciliation

Nabeel Ahmed indicated that a public engagement on reconciliation with the Toronto Aboriginal Support Services Council will happen in about three weeks. Nabeel also noted that reconciliation is going to be added as the 7th principle in the DIP and that policy statements in this principle will be aligned to the City's Reconciliation Action Plan.

C: City of Toronto tenders can allocate bids on specific projects to indigenous providers to support economic reconciliation. This does not need to be specific to the DIP but can be applied to all procurement.

C: I think it is the right decision to take reconciliation out as a policy under the Equity and Inclusion principle, but I think it should be dealt with more broadly than it being its own principle. Reconciliation should be embedded and applied across all the principles.

C: There is a need to consider whether the framing and language being used throughout the DIP is inclusive and not rooted in western world views or colonial history. Words such as control, and common phrases in innovation policy such as pipeline and mission may need to be reconsidered so that the language is understandable but also inclusive.

C: The City of Toronto can consider adding policy that gives itself the duty to engage certain stakeholders, communities, or groups to enhance reconciliation. This might require some type of meaningful exercise informed by design thinking practices, which could lead to better human-centred design.

C: Policy should have a focus on aligning with Treaty, which acknowledges pre-existing governance relationships, rather than just reconciliation.

Implementation

Nabeel Ahmed noted that the DIP project team will be participating in a workshop in the next month on the City of Toronto's Results-Based Accountability framework to explore how to apply this framework to the implementation of the DIP.

C: The principles are focused on operational areas like security, privacy, democracy, and transparency that the City should be doing regardless. The DIP should have a more focused strategic direction and leading target, which can be clearly framed as a transformation plan that communicates how we will move to a future state from where we are today. When the DIP has too many principles then it is difficult to have an implementation plan because there is no clarity on strategic priorities.

Q: **What is meant by City Council providing expanded authority to the Chief Technology Officer (CTO)?**

A: This expanded authority does not take power away from other City functions. It is meant to clarify and codify the role of the CTO in moving the DIP and other projects of the Technology Services Division forward.

(A link was shared in the chat with more information on the specific motion: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.AU4.1)

C: In terms of identifying metrics, it would be helpful to co-create a set of metrics through user-centered design journey mapping to help keep the City of Toronto accountable.

Social, Environmental and Economic Benefits

Nabeel Ahmed presented the public feedback to change the principle's title to be more neutral so that it recognizes that there are benefits and harms to technology. The alternative titles include "Social, Environmental and Economic Impacts" and "Society, the Environment, and the Economy."

C: I am okay with any of those alternative titles.

C: I am more inclined towards a title that touches on avoidance of harm because that touches on the Digital Equity Plan which is a priority for me.

C: All three of these areas – social, economic, and environment - are fundamental principles of the United Nations International Covenant on Civil and Political Rights (ICCPR), so if there is difficulty in choosing a title it can be tied back to human rights.

C: Grouping these three areas together as one principle may lead to them not having an appropriately sized reflection in the DIP. There is already significant rhetoric in the City of Toronto around growing the city's economy through technology, so it should not belong in this trio with the other two.

C: It might be misleading to say that technology is a benefit to the economy, because there are costs associated to it. The fact that economy is included in this DIP principle as something that is evaluated in terms of both benefits and harms, is a major step forward.

Wrap Up and Next Steps

Following the discussion period, Hamish Goodwin noted that the DIP project team is continuing to do consultations on the DIP and going through revisions based on the comments received. The project team thanked the CAG members for their participation during the entire process and the meeting was adjourned.

Appendix D: Drop-in Sessions

The following provides a summary of feedback received through Drop-in Sessions held on October 4, 6, and 13. Each session focused on two principles, as follows:

- Drop-in Session 1 – Digital Autonomy and Privacy & Security
- Drop-in Session 2 – Democracy & Transparency and Well-run City
- Drop in Session 3 – Equity & Inclusion and Social, Economic, and Environmental Benefits

Drop-in Session #1, Digital Autonomy | Privacy & Security

October 4, 2021

Feedback at this drop-in session noted the following:

- Staff will need training to understand digital wallet implications.
- Consider to what degree Privacy Impact Assessments (PIAs) should be publicly available.
- There is a lack of references to “smart IT” in the DIP, and policies around the security of these devices.
- Be specific in the use of the term ‘resilience’. From a DIP perspective, resilience should mean that essential devices are available in the event of a major disruption.
- Provide clarity on list of approved open-source tools and tools not approved for use.
- Promote use of open-source formats for creation and use of data.
    - Need to build and clarify processes specific to evaluating open-source tools.
    - Providing clarity on list of approved open-source tools and prohibited tools will help.
- Current data residency policy in DIP will stifle innovation
    - These policies do not reflect the interconnectedness of the internet and that all major cloud providers are globally distributed.
    - Retaining Personal Identifiable Information (PII) in Canada is more reasonable, while allowing other data to go outside of Canada.

Drop-in Session #2, Democracy & Transparency | Well-run City

October 6, 2021

Feedback at this drop-in session noted the following:

- Consider how to engage and collaborate with hospitals so that data around births, deaths and census is up-to-date.
- Provide details on the role of City of Toronto in the Ontario Digital ID card.
- To build public trust and engagement, the concept of ‘privacy by design’ should be more clearly defined and should use simpler language.
- There should be more information sessions on the DIP.
- Set clearer rules and codes of conduct for how private vendors use City data, as private vendors will be necessary for the City to be efficient.
    - Private vendors will be able to attract and retain better talent than the City as they have deeper pockets.
    - Current laws for how the private sector handles data are too ambiguous.

Drop-in Session #3, Equity and Inclusion | Social, Economic and Environmental Benefits

October 13, 2021

Feedback at this drop-in session noted the following:

- Suggestion to change Equity and Inclusion language from “including” to “centering” equity seeking groups.
- End users of digital infrastructure and services need to be consulted at the beginning of the requirements and design process.
- Suggestion that City RFPs should include clause that requires design to be centred around accessibility.
    - Leveraging accessibility standards from other levels of government will make it easier for industry to comply.
- DIP should include policies that recognize a ‘right to analog’ and the legitimate reasons for not using technology.
    - This is not necessarily an Equity and Inclusion issue because it cannot be solved by giving people devices.
    - Some people are against computerization and digitization.
- Recommend changing the ‘benefits’ terminology to include acknowledgement of harms.
    - Preferred language is ‘benefits and avoidance of harms’ for the principle’s title.
    - Preference for term ‘impacts’ rather than ‘benefits.’
    - Another alternative is ‘outcomes.’
- Policy statement referring to Sustainable Development Goals should be more specific so that staff, particularly in procurement, are clear on how to apply this consideration. Consider providing example targets or metrics.
- Inclusion of Social Procurement in DIP is great, but this will be difficult to satisfy as technology industry is not that diverse.
    - Recommend breaking this objective down into smaller iterative components.
    - The City needs to begin by building relationships with equity deserving communities and organizations, which will take time.
- More categories are needed in the City’s Social Procurement process for IT, as currently the only option is ‘software.’
- Start publishing the Algorithm Register as early as possible.
    - Do not try to narrow the definition of AI too much.

Appendix E: Community Partner and Stakeholder Presentations and Meetings

The following provides a summary of feedback received through presentations and meetings with community partners and stakeholder groups during the consultation period. This includes consultations with:

- Advisory Committees
- Technation
- Cities Coalition for Digital Rights
- Civic Tech Toronto
- Toronto Youth Cabinet
- AI in Municipal Government Community of Practice

Advisory Committees

Advisory Committees are composed of members of the public and Members of City Council. The project team gave a presentation on the DIP to three Advisory Committees and received the following feedback:

Toronto Accessibility Advisory Committee

September 2, 2021

A video of the committee meeting can be accessed here.

- A member noted the importance of user experience testing, and the need to directly engage people with disabilities to understand their needs.
- A member noted that City of San Francisco sponsors a Digital Equity Summit to keep people engaged with its Digital Equity plan.
- A member noted that algorithms may be biased against people with disabilities and suggested that the DIP include a statement on when AI cannot be used. The member also noted that people with disabilities tend to be excluded from decisions and engagement processes need to ensure that their input is included. Suggested the project team connects with Jutta Treviranus, who is an expert in inclusive design, and the We Count project.
- Some members indicated that access to internet should be treated as a human right and noted how COVID-19 has demonstrated the importance of this.
- Some members recommended that it is not sufficient to say that 'we want to increase access', rather there should be a strong declaration that outlines clear goals accompanied by a budget to support actions.
- Some members expressed that City of Toronto should have the goal of providing universal internet access to all residents and should ensure that all City facilities are enabled for public Wi-Fi access.

Confronting Anti-Black Racism Advisory Committee

September 24, 2021

A video of the committee meeting can be accessed here.

- A member noted that there are many newcomers in Toronto for whom language is a barrier. The member indicated that digital inclusion would require providing information in multiple languages.
- Some members expressed concern about police surveillance, the collection of racial and identity-based data, and the use of facial recognition technology. They noted that systemic biases inherent in technology must be considered and addressed.
- Some members inquired about the implementation and evaluation process for the DIP and noted that some of the polices can be measured while others cannot be.
- Some members inquired and discussed considerations around engaging black professionals in the technology community, seniors, and people facing accessibility and affordability barriers.
    - Suggestion to consider how Toronto Public Library, Toronto Public Health, community health centres, and community centres can play a role in engagement.

The Confronting Anti-Black Racism Advisory Committee Requested the Chief Technology Officer to incorporate the Committee's feedback into the work on the Digital Infrastructure Plan.

Two-Spirit, Lesbian, Gay, Bisexual, Transgender and Queer Advisory Committee

September 27, 2021

A video of the committee meeting can be accessed here.

- A member noted the Ontario Digital Literacy Access Network (ODLAN) as a resource that is helping queer seniors.
- Some members indicated that 2S+LGBTQ communities feel criminalized and do not have trust in the system. The members also indicated that communities feel safer when they are not under surveillance.
    - Suggestion to allow individuals to opt-out of automated systems or data collection, and recommended the City be cautious about the data it collects.
- Some members noted the importance of providing child protections and supporting parents, caregivers and teachers in having oversight.
- Some members recommended that the City advocates to the federal government about supporting improved internet access.
- Some members noted that more work needs to be done to demystify digital infrastructure and make it relevant to people.

The Lesbian, Gay, Bisexual, Transgender, Queer and Two-Spirit Advisory Committee Requested the Chief Technology Officer to incorporate the Committee's feedback into the work on the Digital Infrastructure Plan.

TECHNATION

TECHNATION is a national technology industry association. The project team met with TECHNATION on September 15, 2021 and received the following feedback:

- Define what local means in the context of the DIP, and whether firms outside of Toronto can bid on RFPs in Toronto.
- Define what are local benefits and local stimulus.

- Provide more details on ‘Data Residency in Canada’ and how this policy area will play out in terms of practical choices about cloud versus on-premise offerings for future RFPs.

Cities Coalition for Digital Rights

The Cities Coalition for Digital Rights (CC4DR) is a network of over 50 cities worldwide helping each in the development of digital rights based policy-making. The project team met with CC4DR on October 7, 2021, and received the following feedback:

- Consider engaging stakeholders through online courses, presentations, and easy-to-understand materials that feature tangible examples and use cases.
- Equipping staff with resources is important to support transitioning from policy to implementation.
- Focus on data governance is important.
- Provide more detail on how DIP will be sustainable.

Civic Tech Toronto

Civic Tech Toronto is a diverse community of Torontonians interested in better understanding and finding solutions to civic challenges through technology, design or other means. The project team met with Civic Tech Toronto October 5, 2021, and received the following feedback:

- Consider how to engage unionized City technology staff on the DIP. It is essential to have buy-in from these staff or the DIP will fail.
- Include specific details in the DIP on how front-line workers and community organizations can collaborate on DIP implementation and be proactive in securing buy-in from City staff and community groups regarding this collaboration.
    - Getting access to City functions through a secure API will be critical to supporting the DIP’s open-source policies.
    - City staff are sometimes unaware of Civic Tech Toronto and are resistant to provide access to technologies. DIP can support City staff in understanding how to collaborate with Civic Tech Toronto and other community organizations.
    - If there are APIs used by the City that Civic Tech Toronto cannot get access to, it will be important for this to be communicated in advance.
    - It will also be important to communicate in advance what development methods the City does not use or is unwilling to try out.
- Suggestion that public Wi-Fi that travels on hydro wires might be a way to increase access to the internet.
- Make City websites and URLs available without login or authentication.
- Explain in the DIP what are guidelines for considering the long-term custodial relationship of the City with the data that is collected, and whether architecture of the data is designed for infinite expandability and scalability.
- The DIP should play a role in proactively informing WaterfrontTO.
- Concerned that the policies are not built to withstand a major shock such as a big hack, and unclear why the DIP is not designed as an interconnected strategy with other levels of government to bolster resiliency to shocks.
- Consider hiring ‘hackers’ that try to hack the policy to stress test it and identify how to fix gaps.

- Concerned that in practice the DIP will end up being an optional framework that people can plug into, unless there is better engagement and buy-in from all stakeholders.
- Provide more details on the governance of the DIP and what roles within the City will have authority to evaluate and enforce its application.

Toronto Youth Cabinet

The Toronto Youth Cabinet is the official youth advisory body to the city. The project team met with Toronto Youth Cabinet on October 14, 2021, and received the following feedback:

- The City website should be improved, particularly around reducing the time spent and improving the user experience of booking services through the website.

Connected Canadians

Connected Canadians is a nonprofit organization that promotes digital literacy skills amongst seniors and older adults, by providing technology training and support. The project team met with Connected Canadians on October 15, 2021, and received the following feedback:

- Biggest barrier to strengthening digital literacy among seniors and older adults is anxiety. They can adapt but they feel afraid.
    - It is important to create safe spaces for learning and approaches that do not trigger anxiety. For example, do not throw technology and then tech support at seniors.
- Suggestion to create videos that demonstrate navigating the City's website to access the most common functions and services that are used.
- Consider providing workshops that educate seniors and older adults on:
    - Making technology work for you – when things are hard to see, when monitor functions are limited
    - Phishing scams
    - Recognizing fake news
    - Google maps
    - Digital documents
    - Intro to Zoom
    - Legacy social media
- Affordability is another common barrier for seniors and older adults.
    - Work with partners to lend devices that are data enabled.

AI In Municipal Government Community of Practice

The AI in Municipal Government Community of Practice is an informal group of municipal managers, data science practitioners, researchers and public sector support organizations looking to share lessons learned and enable collaborations among municipalities on AI projects. The project team met with the AI in Municipal Government Community of Practice on October 27, 2021, and received the following feedback:

- Consider how DIP can harness Civic Tech Toronto Projects and Code for Canada Fellowship embedded projects like ConnectTO.
- Consider how the Benefits principle can be expanded to include benefits to Canada, with regards to purchasing, social procurement, and ethical production from Canadian companies.

- Engagement with regards to Democracy and Transparency principle should not be reduced to better communication strategies.
- Support the inclusion of Right to Repair policy area.
- Narrow the scope of DIP policies on algorithms – ‘all algorithms’ is too large. Start with distinguishing between AI, algorithms, and machine learning.
- Be cautious in use of terms such as Explainable Artificial Intelligence (XAI), where there is little agreement on what it means.
- Add more specific policies and language around de-identification of information, anonymization, and re-identification.
- Consider the risks of open data being used by large data brokers and how to mitigate.
- Include considerations around City’s automated systems, such as those used by City’s Land Registry Office.
- Consider inclusion of the energy and carbon footprint of algorithmic models in the AI registry, as well as their performance results for public services.
- Consider integrating Fair Work Principles into the DIP, so that factory conditions and fair wages are evaluated as part of procurement and use of digital infrastructure.
- Consider including energy-use and environmental impact assessments as part of evaluations for procurement and use of digital infrastructure.

Appendix F: Toronto Aboriginal Affairs Advisory Committee Meeting

The City of Toronto receives Indigenous focused advice and recommendations through the Aboriginal Affairs Advisory Committee, an advisory board to City Council. Members are made up of Executive Directors and/or Designates from the organizations and institutions in Toronto serving Toronto's Indigenous communities.

The project team met with the Toronto Aboriginal Affairs Advisory Committee on October 22, 2021, and received the following feedback:

A video of the committee meeting can be accessed here.

- A member commented that they would need more information on the topics presented to make recommendations or comments.
- A member indicated that they are concerned about the notion of control and recommended changing the framing to resident control or democratic control.
- A member recommended that reconciliation be included as a different pillar that is separate to the Equity and Inclusion principle. The member suggested that this would encourage different thinking and make room for new partnerships
- A member recommended that the project team consider how the DIP can interact with the City's cultural districts around their digital components.
- Some members noted the importance of improving access to the internet, supporting seniors in accessing devices, and promoting information on safety.
- Some members expressed interest in receiving further briefings on the DIP and suggested that the project team consider what a 'Digital Infrastructure 101' for indigenous communities could look like.

The Toronto Aboriginal Affairs Advisory Committee Requested the Chief Technology Officer to incorporate the Committee's feedback into the work on the Digital Infrastructure Plan.

Appendix G: Emailed Feedback

The following provides all emails submitted by participants to the dedicated project email address digitalfeedback@toronto.ca. All personal information has been redacted unless submitted by a formalized organization.

Email Submission #1

I attended the public consultation on Sep 28, and was heartened to see a great set of principles already set forth. I was concerned though that open source issues hadn't been fully addressed.

I would be happy to have a call with you, but for the ease of reference, I thought I'd lay out the basics of my thinking here.

For over 30 years there has been an ongoing battle between would-be monopolists and the open source community. In many ways the open source community has lost major battles and the would-be monopolists have become de facto monopolists and extracted billions for their sole benefit.

The principles of the DIP echo the foundations of the open source software communities ideology. One of the battles that was lost was the software used by civic organizations like local municipalities - partly because those institutions did not yet espouse principles like the DIP and were easily conned by closed source corporations that then engaged in all manner of vendor lock-in and other efforts to stifle competition and put profit above principles.

In developing the DIP you are likely to see support from these same bad actors as long as there are no requirements for open source. The more onerous the requirements the better for the larger corporations (and more difficult for smaller independents). However, if you include an open source requirement, be prepared to become part of the ongoing war. If you are sincere in your support for the DIPs principles, I believe you must mandate that all software and hardware used by the city be open source (with some reasonable transition procedures, for example, when replacing legacy systems). Because of the strength of the opposition I would urge you to coordinate with allied municipalities and build a federation that can support each other and share the costs of building and (especially) maintaining open source digital infrastructure.

Why should you do this? Because it is the right thing to do. It always has been. Such is the nature of digital technologies that the instructions of their making can be easily shared and be massively collaborative. When malicious, lazy or ignorant craftsmanship inevitably begins to corrupt the digital infrastructure the public can help identify then fix or remove that weakness. This is the foundation of inclusivity, equity, transparency, autonomy, interoperability and innovation, and those, as the DIP rightly acknowledges, are what leads to a truly rich and just society and responsible governance.

There is a wealth of good writing about digital rights and open source, but Cory Doctorow is leading thinker on the subject and has some relevant recent articles:

https://cacm.acm.org/magazines/2021/10/255710-competitive-compatibility/

https://locusmag.com/2021/07/cory-doctorow-tech-monopolies-and-the-insufficient-necessity-of-interoperability/

I am happy to continue this conversation at your convenience.

Thanks,

[Personal information redacted for privacy]

Email Submission #2

Hi Mr. Goodwin,

Unfortunately not all the ways to access the virtual meeting were working; and now that the city is restricting access to several services to be available only through the Internet, then the city is turning the Internet into an essential service that must be available to all residents at all moments.

Attaches is a document with some notes.

Have a great day,

[Personal information redacted for privacy]

Attachment:

Toronto Digital Infrastructure

[Personal information redacted for privacy]

Why should a city worry about its digital infrastructure?

Why do cities have to worry about water, sewage, garbage, roads, schools, hospitals, or many other essential services? Because unfortunately the balance between having access to the basic services with good quality, and having them at a reasonable rate for all residents is rarely achieved by leaving the responsibility of providing that service in the hands of private businesses. Whereas the city just needs a service to reach a particular objective in its long term plans, private businesses only need to obtain as much profit as possible from all their contracts; so it is common to see the quality of a service diminished, or the actual service not being delivered to all residents, when the delivery of those essential services are left to private businesses.

Like many other essential elements required for daily life, the internet is now used directly or indirectly by all residents of most cities in Canada, and Toronto is not exception. We depend on the internet for moving all kind of data, and sadly some segments of society are even beginning to force people to only find some essential services exclusively in some cellphone application. For instance, that is what is already happening with the new COVID Vaccination Passport that the province of Ontario just released, which expects all people to access it through the use of some intelligent cellphone application.

But the reality is than not all residents have the kind of cellphone required to access those applications, or have the budget to pay for the very high monthly subscriptions rates that most telecommunications companies are offering in the city.

A large percentage of the residents of Ontario will only be able to demonstrate their Covid vaccination status in some form of paper passport. Therefore, the people leading the release of

a virtual vaccination passports in Ontario do not seem to be in touch with the reality of many people not having the hardware to access such virtual passport, or more importantly, that many people lack the long term financial income to pay for regular access to the internet.

So besides assuming that all residents will have the proper cellphones hardware soon, and sufficient monthly financial resources to use them. If the long term plan of government agencies is to only deliver services to residents through applications depending on internet infrastructure, then the government is making the internet an essential service which will be expected to be available at all times to all residents.

In that case, governments will need to ensure that this new vital service is available for all, and like it has done during several decades for other services like clean water in many cities, it requires many different elements to keep it working well.

For instance, as technologies are changing quite often with constant equipment improvements promoted by the industry selling it, the solution the city provides might also require some regulation to standardize speeds, connection types, bandwidths, and many other elements to protect users, and the environment from being assaulted. For example, around the world, in an effort to provide high speed Internet access to all residents, at a reduced rate, some municipalities have created their own network infrastructure; which is usually built and managed in several ways after deployment. Those municipal networks could go from simply deploying dark fibre, to full service that competes with private ISPs; some examples of these network are the full service network of the city of Chattanooga, Tennessee, or the open access network of the city of Utah, or the dark fibre network of the city of Stockholm, Sweden, and many others.

But one of the more successful open network implementation is the case of the STOKAB optical fibre network in Stockholm, Sweden, which was established and has been operating since 1994. The city owns all the passive infrastructure of its optical network (dark fibre) and does not provide active termination. Instead, companies lease capacity between access nodes. See additional details at https://stokab.se/

If a city is going to build a public Internet network it should be:

- competition-neutral
- able to evolve into future telecommunications needs
- provides freedom of choice and alternatives to end users
- stimulates development in the region, with minimal interruption

Considering what is being offered by the local telecommunications companies, it is probably a good time for the city to install a basic public network to really reach all residents at a reasonable monthly rate. Traditional telecommunications companies can continue operations leasing capacity in the optical network, and concentrating in offering more specialized services.

Email Submission #3

Dear City of Toronto,

As a follow up to my previous document, I am sending some notes about a Digital Network Infrastructure for the city of Toronto.

[Personal information redacted for privacy]

Like in the history of many others utilities, the connection to the Internet network in Toronto has changed over the years as a service offered by traditional telecommunications companies in different forms and modalities, or in a very limited way by some government agencies.

There is always the debate whether the private sector can deliver a service better than a city or government department. And as it has been proven countless times with many services in different cities around the world, a well managed, government agency can always deliver a better service to users than private companies.

The reason for this difference is simple, the main driver behind private companies is to maximize profits; whereas the government agency can concentrate on the quality of the service for the people, that meets the mind and long terms plans, for the projects already approved.

Of course, large, traditional, telecommunications companies always strongly oppose any efforts by the government to deliver Internet to its residents; because it goes against their business. But then comes the balance that politicians have to evaluate, is it most beneficial for the government to deliver this important service, that some government agencies have made essential, or is it worth for society, to continue allowing a few large telecommunication companies the sale of a poor service at a very expensive monthly fee?

We need to look towards the future and the best ways to reach the objectives approved by government. Why should a city worry about its digital infrastructure? Because now that Infrastructure has been declared essential.

Considering what is being offered by the local telecommunications companies, it is probably a good time for the city to install a basic public network to really reach all residents at a reasonable monthly rate. Traditional telecommunications companies can continue operations leasing capacity in the optical network, and concentrating in offering more specialized services.

If a city is going to build a public Internet network it should be:

- competition-neutral
- able to evolve into future telecommunications needs
- provides freedom of choice and alternatives to end users
- quality service delivered at a minimum monthly fees to all residents
- guarantees availability of this essential service to all, with minimal interruption

Email Submission #4

Hi,

I was just made aware of the city's digital infrastructure plan today, and unfortunately I will not have time to provide formal feedback. However, I think my input is important. I am an emergency physician working at University Health Network and in the spring of 2020 I established a program called Phone Connect because so many of our emergency department visitors are vulnerable patients who do not have access to telephones. Throughout the epidemic they have been shut out from virtual care and I think that there is a very large issue at stake, which I and my colleagues frame as "digital health equity". I appreciate all that the city is doing

with respect to enhancing digital access. Nevertheless there are so many people within our city who are unable to access a multitude of social services and healthcare providers for lack of a telephone. Since March 2020, I have distributed over 300 telephones with active SIM cards via Toronto General Hospital and Toronto Western Hospital, and have worked with Saint Michael's hospital and Michael Garron Hospital to establish similar programs. I would really like to speak about this issue further and encourage someone within your office to contact me personally. [Personal information redacted for privacy]

Email Submission #5

Hello Digital Infrastructure Project Team,

The Council of Canadian Innovators (CCI) appreciates the opportunity to provide feedback on the City of Toronto's Digital Infrastructure Plan (DIP). On behalf of our membership, we have attached a document with feedback on the plan's key principles and associated policy areas. Prior to the DIP's implementation phase, we invite the City to lean on the expertise of our membership base and discuss this feedback further.

About the Council

CCI was founded in 2015 to ensure the voices of Canada's CEOs were heard in the public policy development process on innovation. Today, the Council is composed of over 140 CEOs who are the leading experts in their fields of health and clean technology, fintech, cybersecurity, and information and communication technology. All of our members are innovators, job creators, investors and philanthropists. Currently, the Council is chaired by Jim Balsillie, former Chairman and co-CEO of BlackBerry, and John Ruffolo, former CEO of OMERS Ventures, and the founder of Maverix Private Equity.

Thank you for your time and consideration, we hope to hear from you soon.

Abu Kamat
Policy Advisor
Council of Canadian Innovators \ Conseil Canadien des Innovateurs
604.351.9542 | akamat@canadianinnovators.org

Attachment:

Council of Canadian Innovators Submission Re: City of Toronto Digital Infrastructure Plan
October 19, 2021

The COVID-19 pandemic has accelerated the need for digital transformation and support programs to solve problems on a global scale. To that point, the Council of Canadian Innovators (CCI) applauds the City of Toronto for moving forward with its Digital Infrastructure Plan. On behalf of our membership, CCI has compiled some brief feedback on the plan's key principles and some of the associated policy areas.

1. Equity and Inclusion

CCI applauds the inclusion of this principle and is encouraged to see the City of Toronto placing access and availability at the core of digital infrastructure projects. Participation in the digital economy, via digital infrastructure, should be driven by the desires of the individual and not seen as a punishment for those unable to participate. To be truly equitable, infrastructure governance frameworks should consider minimum technical requirements. Limited access to technology is a critical barrier to adoption for many marginalized Torontonians and will therefore require the government to create complementary options in which citizens may continue to use trusted, familiar, and known services. CCI also encourages the City of Toronto to engage in significant and sustained citizen education and engagement to ensure people understand the value of the ecosystem and the various benefits that will accrue to them in a digitally driven city landscape. Particular attention should be paid to helping guide users on how their privacy is respected, and how they can discover and use new digital infrastructure in specific scenarios.

2. Well Run City

For CCI, the City of Toronto's ability to develop, and implement effective data governance frameworks is imperative (Policy Area 3.2). Currently, the infrastructure plan demonstrates an admirable recognition of data as an invaluable asset in evidence-based decision making and the development of new digital infrastructure. However, our concern is that there is still little indication or specificity regarding how city data will be stored or governed. Given the scope and impact of data-driven technology, data governance is an essential component of the plan that must be prioritized moving forward.

Our members are highly invested in data governance rules and privacy reform that promotes consumer trust, facilitates innovation, and encourages cross-border commercial activity. We emphasize that any new data governance frameworks should not hinder, but instead empower, companies operating in key sectors of the economy (i.e.: health, education, and clean energy) to develop and grow their transformative technologies and contribute to the local economy. Innovators who run data-centric companies require a clear understand of terms, concepts, and regulatory rules that they must comply with and the applicability of these components to their current and future commercial activities. Moving forward, CCI encourages the city to lean on the Ontario government and its upcoming plans to establish data and privacy frameworks for those organizations operating in the province of Ontario to ensure the data governance framework aligns with wider standards and minimizes compliance burdens on businesses.

3. Social, Environmental and Economic Benefit

CCI is concerned that the economic component of this principle is too vague as it relates to the procurement opportunities for domestic technology companies (Policy Area 4.2).

Procurement is the most powerful economic development tool available to the government. If used strategically, it can fulfil the City of Toronto's digital infrastructure goals, stimulate key sectors, and help the province achieve sustained economic growth. For the company itself, a contract with the City will act as a multiplier when doing business with other governments or cities abroad. Such a contract may also act as a validator to draw more investment capital into the province.

As the City moves into the plan's next phase, we suggest prioritizing vendor engagement and education for domestic firms so that they are an active participant in the City's digital transformation process. This includes:

- Creating a pathway for unsolicited proposals. Businesses have ideas that are unique, innovative, and valuable to government, even though it may not solve something that has been identified as a current need or priority. By creating a platform for unsolicited proposals, the City will encourage suppliers to put forward ideas that will help it to deliver better public services.
- Providing more opportunities for domestic companies to showcase their technologies to the government. This could take the form of demo days, roundtables, or forums, with the intent of widening the circle of voices on the matter of technology procurement and empowering domestic firms to demonstrate how their technologies can contribute to the City's digital transformation.
- Prioritizing education and awareness for domestic firms on how to navigate any new procurement processes for digital infrastructure from start to finish will be key. Too often, local companies are dissuaded to engage with the government on procurement because of the time, resources, administrative burden, and human capital required. By making the procurement process more transparent and streamlined, the City will level the playing field, signalling to the local tech sector that they are serious about supporting Toronto firms and using their technology services to solve digital infrastructure challenges for citizens.

4. Privacy & Security

CCI is encouraged to see this key principle within the infrastructure plan. The way privacy and data are handled will undoubtedly have a transformative impact on how the private and public sector will interact and engage with the City of Toronto. Prior to the pursuit of new digital infrastructure, CCI maintains that the City of Toronto must ensure Torontonians possess codified rights over how their data is used and how their privacy is respected. This requires the City to work in tandem with the provincial and federal counterparts to clearly articulate how any new technology will be interpreted and who will interpret it in existing or emerging legal frameworks. There must be clear responsibility between a citizen and their services, and citizens should have clear guidance and awareness on how their data is being used, and by whom. This ensures that citizens have a choice in the use if their information.

Additionally, to ensure that the ecosystem supports data protection and privacy, the City should consider how to embed existing and traditional authentication processes which limit the capability for fraud. At the same time, to increase adoption and support citizen empowerment through user agency, any new digital services should not overburden citizens through expensive 'pay to play' engagement models.

Finally, the City should build the digital literacy tools for Torontonians to become better informed and place trust in city digital infrastructure projects. For these tools to be successful, it is critical that the City consults and collaborates with domestic technology companies to ensure the development process is iterative.

5. Democracy and Transparency

CCI is encouraged to see this principle within the infrastructure plan. Maintaining transparent democratic processes through the implementation phase of this plan is necessary to instill lasting public trust in digital infrastructure. On the matter of algorithmic transparency and responsibility for Artificial Intelligence (A.I) technology referred to within the plan (Policy Area 6.5), the City of Toronto must align their goals with the provincial government who is developing an AI framework based on a series of consultations and recommendations with industry experts. This is necessary to ensure consistency within the province and to avoid unintended consequences for businesses who might get bogged down by unnecessary compliance hurdles.

6. Digital Autonomy

CCI is pleased to see this principle within the infrastructure plan. The ability of the City to maintain control in the selection, use and design of its digital infrastructure is extremely important in the intangible economy where ideas and knowledge (i.e., intellectual property) are the most valuable wealth generating assets. We stress that moving forward the standard setting and development process around Open-Source Software must include consultation with domestic innovators. (Policy Area 7.3). To develop truly interoperable standards, the City must collaborate industry experts to understand the needs and capacities of companies and the technologies that will be integrated into the city landscape.

About The Council of Canadian Innovators (CCI)

The Council of Canadian Innovators (CCI) was founded in 2015 to ensure the voices of Canada's CEOs were heard in the public policy development process on innovation. Today, the Council is composed of over 140 CEOs who are the leading experts in their fields of health and clean technology, fintech, cybersecurity, and information and communication technology. All of our members are innovators, job creators, investors and philanthropists. Currently, the Council is chaired by Jim Balsillie, former Chairman and co-CEO of BlackBerry, and John Ruffolo, former CEO of OMERS Ventures, and the founder of Maverix Private Equity. Learn more about CCI at http://www.canadianinnovators.org.

Email Submission #6

RE: City of Toronto consultation on the draft Digital Infrastructure Plan (DIP)

The Canadian Civil Liberties Association (CCLA) welcomes the opportunity to comment on the draft Digital Infrastructure Plan. CCLA has been following the progress of this plan and participating in opportunities to provide feedback as they emerged since its inception.

The process of developing this plan began when Torontonians were deeply engaged with issues of smart cities and digital infrastructures as a result of the controversial plan for the Waterfront Toronto Revitalization Corporation and Sidewalk Labs, a Google sibling company, to develop a smart city testbed in the Quayside neighborhood. CCLA was sufficiently concerned by the decisions of the City of Toronto, the province of Ontario, and the Government of Canada to permit this development and to give the vendor/private sector partner, Sidewalk Labs a significant and inappropriate role in digital governance policy that we commenced legal action to

reset the project. Thus it is that we welcome and support the creation of a digital infrastructure plan created by the City, subject to democratic accountability and grounded in the needs and wants of its residents.

The six principles at the core of the DIP are the correct focal points for such a plan. They recognize the core challenges around equity in the diverse communities that make up the City of Toronto and the potential benefits and harms that data-driven technologies can pose for residents when efficiency butts up against public good (with all of the complex questions that adhere to that concept—who is the public? Who decides what is good? When does harm to the minority outweigh good for the majority?). We strongly support the inclusion of the principle of Digital Autonomy in the plan, an important addition since the principles were initially published in 2019.

But there is a significant weakness in the DIP, and it lies in the “vision” for Privacy and Security, Principle number 4. The vision statement reads:

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.

With respect, legal compliance is not a vision, it is a necessity. It is the bare minimum, baseline requirement when considering, procuring, and using digital technologies in the city. And it is a woefully inadequate requirement at that. Indeed, during the Waterfront Toronto/Sidewalk Labs debates, the one thing every stakeholder agreed upon was that our current municipal, provincial, and federal privacy laws are not up to the challenge of protecting residents from the potential invasiveness of ubiquitous, interconnected, AI-enabled and data-driven technologies embedded into city infrastructures.

CCLA was critical of Waterfront Toronto’s efforts to develop Draft Digital Principles for data governance in the Quayside Project, largely because they were not the appropriate body to do so, neither publicly accountable, nor able to enforce their guidelines in any way beyond contract which is insufficient to ground fundamental protections of rights and freedoms in a city-building endeavour. But their principles and the conversations around them clearly and explicitly recognized the inadequacy of our current privacy regime for smart city data governance and went beyond strict legal compliance to an aspirational commitment to privacy best practices in a way that the City plan markedly and remarkably fails to do.

The need to go beyond strict legal compliance was explicitly highlighted during the public stakeholder consultations that led to this version of the plan over the past two years, from its inception in 2019 to now. In a report to City Council on the first round of public engagement, dated January 2020, it is mentioned twice in the executive summary alone that participants want the DIP to exceed minimum requirements, and specifically want policies developed under the privacy principle to exceed minimum standards (for convenience, see https://www.toronto.ca/legdocs/mmis/2020/ex/bgrd/backgroundfile-141691.pdf).

CCLA is putting a spotlight on this need again, now. The City of Toronto can and must do better when it comes to a “vision” of privacy in the contemporary city as we move forward with embedding data collection into infrastructures. Privacy is a foundation for many of the principles in the DIP. It protects equality, by prohibiting or regulating the kinds of data led surveillance that permits social sorting or individual discrimination based on identifying characteristics including race, gender, sexual orientation or other protected categories under human rights law. It

facilitates democratic participation, grounded in an ability to express oneself freely, to publicly agree or dissent in public debates without fear, without the chill that could be caused if surveillant infrastructures become part of the cityscape. It must underpin a Well-run City, because innovative public services will find neither public acceptance nor public trust if residents are unconvinced their privacy is appropriately protected in new systems.

We recognize that the commitment to Privacy-by-Design and privacy impact assessments do, despite the limits of the vision statement, demonstrate a broader commitment to privacy. Both are important, although neither sufficient in and of themselves to address the concerns we have about the scope of privacy protections the city considers necessary in the DIP, because both, in turn, tend to enforce and support a legal compliance posture towards technology. Privacy by design, in particular, is product focused. It is valuable, but it is not designed, nor could it be, to address the potential for data integration and sharing across the full (and ever-evolving) suite of digital infrastructure elements, or the consequential social effects, that go beyond privacy to other rights contingent on privacy protections.

Fulsome privacy protection requires not just legal compliance with the set of inadequate laws we currently have in Canada, but principled and nuanced consideration of the interconnected rights at risk when we fail to ground privacy protections in a rights-based framework. It requires an aspirational, truly visionary commitment to evolving best practices based on ethical codes, international and national standards, and principles that should be, but are not yet enshrined in privacy laws that are fit for the 21st century. Most fundamentally, Toronto's vision should acknowledge the reality that privacy is a human right, necessary for human dignity and autonomy for all of Toronto's residents and visitors.

Should you wish to discuss this submission, please feel free to reach out either by email, bmcphail@ccla.org or phone, 416-668-4777.

Sincerely
Brenda McPhail, PhD
Director, Privacy, Technology & Surveillance Program
Canadian Civil Liberties Association

Email Submission #7

Dear Hamish,

The definition and principles should be updated.

Since other changes are being made to the principles, these changes are appropriate to happen at this time.

In the definition, add "digital automation", so that it reads:

Digital infrastructure means infrastructure that creates, exchanges or uses data, information or digital automation as a part of its operation.

In the principles, add "and avoidance of harms" or change to "impacts", so that this principle reads:

Social, economic and environmental benefits and avoidance of harms

or: Social, economic and environmental impacts

Digital infrastructure will contribute to positive social, economic and environmental benefits and avoid harm by supporting the success of Toronto's residents, businesses, academic institutions and community organizations.

In the policy categories add "and avoidance of harms" or change to "impacts", so that they read:

Social benefits and avoidance of harms or Social impacts

Economic benefits and avoidance of harms or Economic impacts

Environmental benefits and avoidance of harms or Environmental impacts

Sincerely,

[Personal information redacted for privacy]

Email Submission #8

Hello Nabeel and Colleagues,

The IPC welcomes the opportunity to comment on the current draft of the City of Toronto's Digital Infrastructure Plan (DIP). We commend the City's commitment to transparency and public consultation in the development of the DIP, as well as the strong principles-based approach driving the City's work in this area. In keeping with our mandate, we offer the following staff-level submission for your consideration as the first step in what we hope will be a continued dialogue on this important initiative (a PDF version is attached for your convenience).

Flexible and forward looking

The Digital Infrastructure Plan will need to be forward-looking and flexible in order to anticipate or accommodate future changes to privacy law.

Infrastructure lasts – so it should be designed for potential futures, not just for the present. This is as true for future legal requirements as for technical ones. It is plausible that both federal and provincial privacy and information regimes will be updated in the coming years – and potentially several times during the life of digital infrastructure investments.

So digital infrastructure should anticipate and facilitate future requirements for greater transparency and more sophisticated privacy protection than are set out in current law. It would be prudent to build forward-compatible features into the digital city environment. For example, infrastructure should allow for efficient ways of establishing data provenance, tracking personal information across uses for different authorized purposes, displaying information flows, identifying and reporting on breaches, and enabling audits.

Transparency

Establishing and maintaining public trust will depend on clear and transparent communication regarding what data and information is collected and how it is being used, including specifically for law enforcement purposes.

As government institutions implement digital infrastructure, any service improvements, efficiencies, and tools for planning and development should not come at the cost of the public's access and privacy rights. Toronto's Digital Infrastructure Plan does well to include these

considerations by highlighting democracy and *transparency* as a guiding principle. We suggest that transparency could be strengthened in the following ways.

First, many surveillance and sensor technologies have the potential to collect and store information that may be useful to law enforcement. However, these technologies should be publicly understood and developed with necessary guardrails to ensure lawful authority, public safety and respect for privacy rights among other human rights. A digital infrastructure plan should include a policy statement on law enforcement which addresses these concerns.

Next, the draft DIP explains that personally identifiable information *cannot* be sold by the City for the purpose of revenue generation. However, the City's position on the sale of de-identified data has not been made clear. The City's approach to data usage for behavioural nudging or non-commercial ad targeting is also absent from the DIP. Research has suggested that Ontarians are concerned by such uses of data and hold a negative view regarding their implementation. Including a detailed policy statement on these issues would facilitate a more robust analysis of potential privacy concerns.

Finally, a framework or roadmap towards informed consent concerning internet-connected smart infrastructure is an important consideration. Technical and regulatory controls for meaningful, informed consent regarding the collection of data by internet-connected smart infrastructure (or Internet of Things) is an ongoing challenge for policymakers and complexities will need to be addressed through openness and transparency and a commitment to meaningful data collection notifications.

Digital Autonomy

The City's Digital Autonomy should be pursued with an eye to individual and group autonomy.

The incorporation of digital autonomy at the city level is an important consideration for self-determination and democratic governance. The idea is to avoid vendor lock-in and other undue constraints on the city's ability to design and govern its digital infrastructure.

But individuals also have an interest in their own digital autonomy to access and exert some control over their unique data footprint. We see a movement towards individual digital autonomy, for example in the province's plan to implement self-sovereign identity that would enable an individual to make choices regarding which aspects of their data or information is shared. In line with this, the DIP may consider an opt-out strategy and/or "right of data portability" within the City's data governance framework – at minimum where any collected information is identifiable. Of course, individuals' right to access personal information about themselves should be a foundational consideration in the development of any digital infrastructure (or associated services).

Group digital autonomy is also a key consideration, specifically as it relates to data or personal information involving Indigenous peoples. For instance, the DIP would strengthen government commitments to First Nations data sovereignty by engaging with the OCAP® principles as a framework for the collection, use, and disclosure of data concerning First Nations peoples. These considerations may include mechanisms for the efficient flagging and transfer of data that involves First Nations peoples to First Nations data stewards.

Other Comments

Resilience: Infrastructure should be resilient in the face of disruptive social and environmental change – but also transparent in how it responds to shocks and chronic stresses to the system at large. We appreciate that you have included discussions of resilience for both infrastructure and services, as well as cyber resilience, throughout the DIP. In our opinion, resiliency is a critical consideration for all digital infrastructure. As such, we would recommend that it might warrant a dedicated "Policy Area" (for instance, under the Well-run City).

Citizen Lifecourse: We appreciate that the concept of responsive digital infrastructure is included in the DIP, but believe that it could be expanded to explicitly include considerations about the full lifecourse of individuals. For instance, as currently drafted, the Digital Infrastructure Plan correctly recognizes that children's personal information is considered highly sensitive, and states that information about youth will not be knowingly collected without verifiable parental consent. It is important that the Digital Connected Community envisioned in the Plan protect youth, while not excluding them (or any other group), such as through a commitment to include them in design decisions. The digital infrastructure should be designed in a way that is sensitive to the privacy and access rights of people with diverse backgrounds and abilities from childhood all the way to old age.

Conclusion

Again, thank you for this opportunity to provide feedback on the Digital Infrastructure Plan. The general approach to date suggests you have a good foundation upon which to build. We look forward to continued engagement on this project, and on the City's work on digital infrastructure more generally.

Sincerely,

Angela Orasch (she/her)
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Appendix H: Phone Feedback

The following provides a summary of feedback received by phone. During the consultation period, the DIP project team had 2 phone calls with members of the public interested in providing feedback over the phone. Feedback received by phone focused on the following themes:

Digital Health Equity

- Vulnerable people without a phone or internet cannot participate in virtual health care, which means they do not have equal access to health care. People in this situation cannot be reached by contract tracers, or by health practitioners trying to share medical results or schedule appointments. This is resulting in people getting sicker, and negative health implications for the community.
- Typical characteristics of vulnerable people that are cut off from virtual health care include those that are low income, experience homelessness, have mental health challenges, are socially isolated, and are frequent emergency department users.
- This lack of access to phones is a service gap.
- To address this gap a volunteer-run program called Phone Connect distributed approximately 1000 donated phones and 150 SIM cards through Toronto General Hospital and Toronto Western Hospital.
- Survey of Phone Connect recipients showed quality of life impacts beyond accessing health care, such as finding employment, building social relationships and networks, and staying in contact with other service providers such as social workers, probation officers and addiction specialists. These outcomes cannot be achieved through payphones.
- The Phone Connect initiative has been kept going through fundraising and volunteer time, but a more sustainable solution is needed.

Digital Procurement

- Consider how to engage locally based small and medium technology business through pre-procurement activities.
- Consider having a challenge process where SME suppliers other than vendors of record are encouraged to participate, and where the top performers are invited to the next procurement stage.

Technology in Public Works and Services

- Toronto's forest management strategy seeks to increase tree cover by 30%, but this cannot be done solely through public means. Consider how digital technology can be used to encourage homeowners and developers to participate in this goal, and support those actions.
- Consider how the digital canopy can link to services like 211 Ontario, 311 Toronto, and NG911.