

# Montréal's Digital Data Charter

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**In collaboration with:**

In collaboration with Nicolas Merveille (Université du Québec à Montréal) and numerous members of the city administration, notably from the registry, diversity and social inclusion, ecological transition and resilience, culture, urban planning and mobility, and economic development services.

Note: This document will follow an iterative process in order to continuously reflect the reality of advances in technologies, the legal context and knowledge. Collaboration and citizen participation are at the heart of this process. We therefore invite you to share your comments, suggestions for improvements and feedback by writing to the following address: [lab.innovation.urbaine@montreal.ca](mailto:lab.innovation.urbaine@montreal.ca).

**“Montréal acknowledges that the city lies on Aboriginal territory known for millennia as a place of meetings and diplomacy between peoples as well as for the Great Peace of Montréal Treaty. We thank the Kanien’kehá:ka (Mohawk) Nation for their hospitality on unceded territory.”**

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Footnote: Italicized words in the document are defined in the glossary.

# Message from the elected official

As part of a major digital shift initiated a few years ago, Montréal has been spearheading digital transformation within the global network of metropolises. As the digital transformation accelerates, data are playing a key role in cities' ability to meet the many challenges they face. Although data use is creating a prime opportunity for Montréal to improve its service delivery and decision-making processes, it is also raising several ethical issues to which we must find solutions.

This is why Montréal has decided to adopt a Digital Data Charter in order to meet the many challenges posed by the use of massive data. Composed of 13 principles divided into three key commitments, this Charter is intended to be a governance framework that establishes ethical criteria for the collection, management and use of digital data by the city's various departments and boroughs.

The collaborative and co-design work of the Laboratoire d'innovation urbaine de Montréal, information technology services, partners from the digital and academic communities, as well as the participation of the Montréal community, has made the publication of the first version of the Digital Data Charter possible. This document is evolving so it can thus adapt to the evolution of technologies and the various urban issues that the city will face.

This Charter is a reference framework that demonstrates that Montréal is using digital data ethically and responsibly in order to face various crises, particularly related to climate and health. It also illustrates the city's quest to be more resilient and to continue to offer better services to citizens. The city hopes that this Charter will be endorsed by its many partners and collaborators. It will thus ensure that these actors collectively guarantee human rights in the digital age, together with the primacy of the general interest and the common good, in order to build a brighter future.

## **François William Croteau**

Executive Committee Member responsible for Smart City, Information Technology and Innovation



# Statement of Principles

The growing use of digital data in management and decision-making within public administrations has led Montréal to **describe and explain the methods for regulating and controlling the life cycle of digital data**. The data improves urban living environments and informs collective and individual decision-making. Used improperly, data can also impinge on individual or collective freedom by multiplying surveillance tools, maximizing control mechanisms and allowing information to be manipulated.

Montréal has produced this document in order to **strengthen the transparency, accountability, flexibility and efficiency of its digital data management**.

We invite our partners and all stakeholders involved in the city's economic, social and territorial development to follow these principles and commitments, which provide an opportunity to reaffirm our **trustful** relationship with the entire Montréal community.

This charter promotes ethical data production and responsible data management and use. It addresses the governance of digital data through its lifecycle, ensuring that all stages are taken into account. The charter aims to encourage the **advancement and enhancement of data use**, while preventing the risks of abuse or malicious practices.

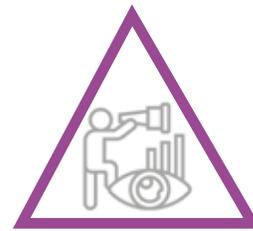
**The charter comprises 13 principles that are expressed in the form of three commitments:**



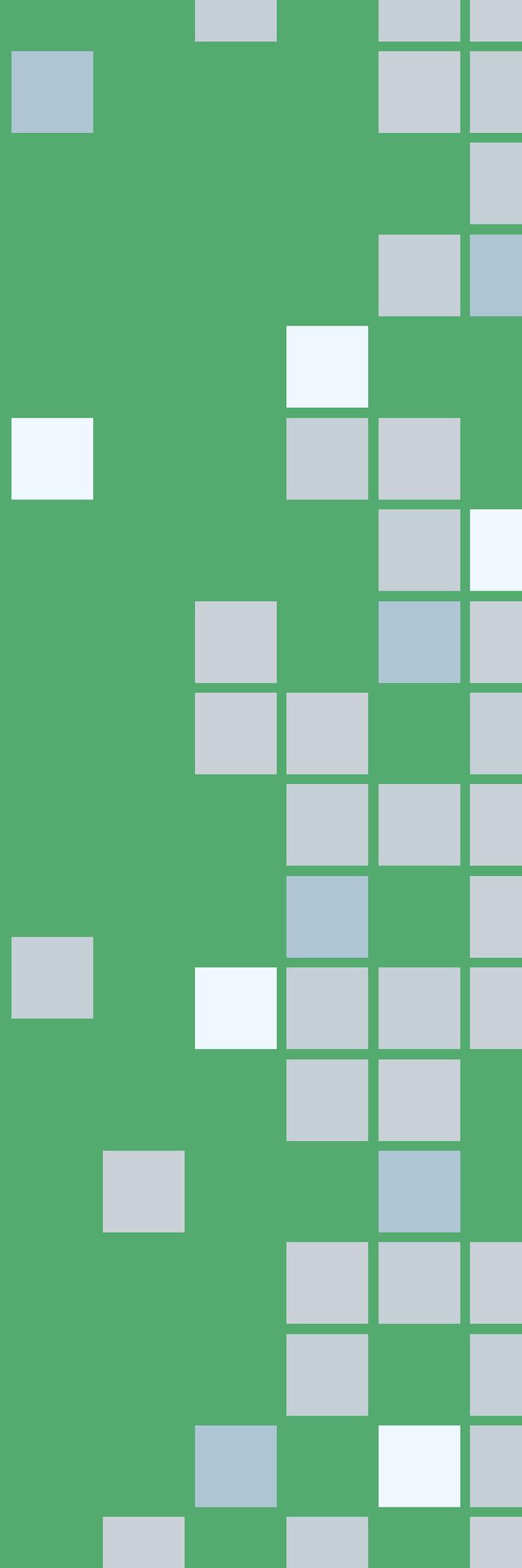
**Protect human rights in the digital age**



**Promote the general interest and the common good**



**Build a brighter future through data**



# Protect human rights in the digital age

All individual rights remain protected in the digital space, particularly those related to privacy.

## 1 Right to privacy

### Preserving privacy and preventing surveillance

The deployment of *connected urban infrastructures* on the territory and the emergence of massive data processing tools increase the possibilities of *individual* and collective *traceability*. To lower the risk of a smart city becoming a surveillance territory, a political, legal and ethical framework is indispensable. Every effort will be made to ensure that technical devices, such as sensors, serve to enrich the democratic universe rather than further commercial or strictly public safety purposes.

More specifically, the city undertakes to remain vigilant regarding the deployment of sensors on its territory. It will do so by regulating all technologies that allow *personal identification*, notably by banning the collection of biometric data, including *facial recognition* without consent, by entities under the responsibility of the city council, and by applying the principles of inclusive public participation in analyses of the use of these technologies.

In addition, *anonymization* techniques are applied as early as possible in the production cycle of data intended to be shared outside the predefined normal security framework. This commitment also implies the principle of transparency, i.e. listing and communicating all data capture tools in the public domain, including the rationale for and use of the data, along with the documentation and publication of anonymization efforts. To ensure that we constantly keep pace with tools and systems that facilitate data re-identification, we are committed to re-evaluating and improving our anonymization approaches in line with best practices and the latest technological advances.

## 2 Inclusion

### Ensuring equity and fighting discrimination

To avoid introducing biases and to identify blind spots that might exclude vulnerable populations and reinforce existing inequalities, data management must allow the implementation of gender-based analysis from an intersectional perspective (GBA+). Thus, it is essential to include disaggregated information in order to detect discriminatory phenomena. We are committed to integrating GBA+ principles in the collection, processing, analysis and dissemination of data. It is equally necessary to ensure that the use of datasets by ostensibly neutral software or algorithms does not lead to the exclusion or stigmatization of a part of the population, especially vulnerable groups.

Each group must be visible, without prejudice or privilege. To avoid all types of discrimination, it is essential to ensure the quality and *traceability* of the digital data entrusted to us, as well as data produced and used in our processing and analyses, regardless of the dissemination medium. Each time data are used, the user must be able to report on the conditions of the use and on the results obtained, along with their impact on the services delivered, as well as on the measures taken following the analysis of the data.

## 3 Cybersecurity

### Protecting personal data

Protecting personal information implies protecting privacy. To minimize the risk of intrusion, loss, alteration or disclosure, data must be protected. To meet this obligation, we undertake to determine and implement the necessary means to protect the data, particularly of a personal and confidential nature, together with the integrity and availability of *information systems*. To this end, we will notably implement controls to strengthen the security of personal data and upgrade internal knowledge in terms of information security, including the means of investigation following a breach in our defenses. Montréal is also committed to following best practices to ensure the resilience of its information systems and critical municipal infrastructure.

Above all, Montréal endorses data hosting in Canada. Failing that, the city is obliged to ensure that the jurisdiction where the information will be stored has legislation that protects personal information at least as strong as that of Québec, and that this legislation is upheld over time.

## 4 Consent

### Ensuring full citizen control over their digital footprint

Each person living in a specific territory agrees to share some of his or her data in exchange for municipal and/or other services. When collecting this data, we must clearly specify the scope of the use and must obtain explicit *consent* for such use. In addition, each individual must be able to request a modification to or deletion of the data provided, and is free to revoke his or her consent. In this case, they may not receive certain services (which require these data). Thus, we are committed to putting in place mechanisms to understand and better control the sharing of citizens' information, for example by developing a list of data collected about individuals within their user accounts.

Given that consent may not be applicable for external data capture (e.g. Bluetooth), we will rely on the principles of anonymization, public commitment and transparency to ensure deployment in line with the principles of this document. Note that the withdrawal of consent or deletion of data is not possible for certain data that a municipality needs to fulfil its duties on its territory.

## 5 “Digital sobriety”

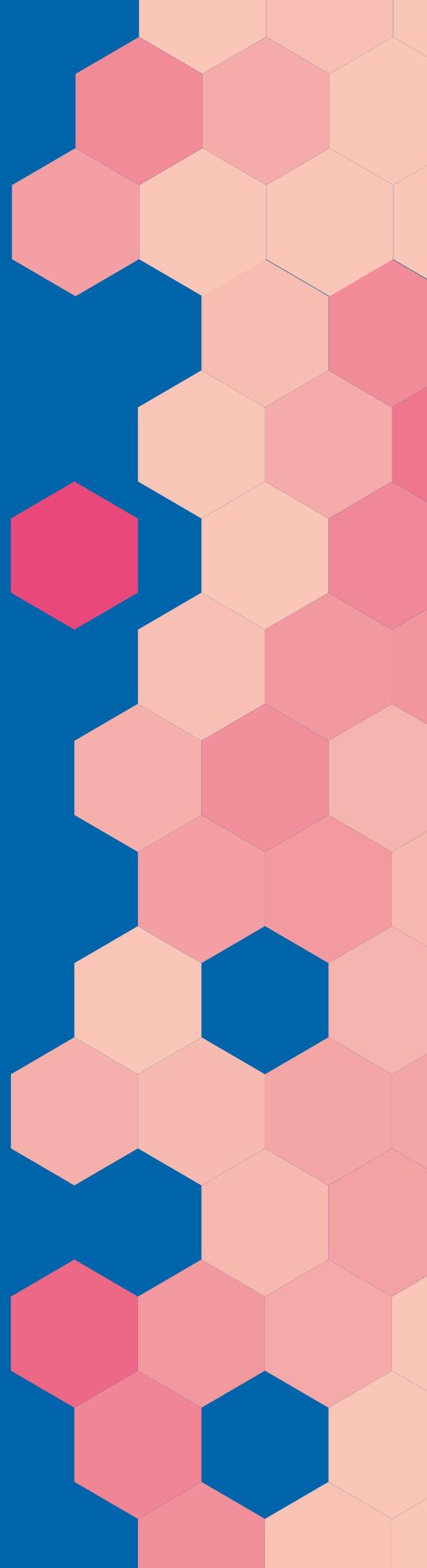
### **Striving for reasoned and reasonable use of data**

The evolution of data collection and processing technology is increasing the possibilities of data generation. Data are collected for specific, explicit and legitimate purposes. The legal framework stipulates that all collection of personal information is limited to that which is strictly necessary for the provision of a service. Data cannot and must not be further processed in a manner incompatible with these purposes without the consent of the parties involved.

Digital sobriety (also known as Lean IT) implies a commitment to collect only the data necessary and sufficient for the fulfilment of the city’s public service mission, and not when the outcome is known in advance. It is also a commitment to limit data storage and to consider the existence and end-of-life cycle of digital data. This involves documenting the rationale for each data item and its retention period within a data catalogue.

# Promote the general interest and the common good

Data are managed as a  
common good in that *the  
general interest outweighs  
the particular interest, except  
regarding personal information.*



## 6 Common Good

### Collecting data on behalf of the community

Organizations collect data that are public in scope or that serve the public interest on behalf of the citizens. These data represent a shared asset and a common good. Therefore, it is the city's duty to allow each individual to benefit from the value of these data by making it available to residents. Thus, this public data is owned by the territorial administration, i.e. Montréal.

However, the city must ensure that personal data remain the property of the individuals concerned, and are strongly protected. In particular, Montréal is committed to continue publishing the data available under a clear open data policy, together with a user licence that allows a wide range of uses. It will also put in place governance that ensures explicit distribution of responsibilities for access to and use of data.

## 7 Digital Sovereignty

### Sharing *data of general interest on the territory*

Whether as a producer or collector, the city must ensure that it controls the data related to its territorial jurisdictions. To promote the public good, the data from certain actors, public or private, could thus be declared to be of *territorial interest* and should be shared with the city. For this sharing, we undertake to define clear and concerted frameworks for dialogue and application with the stakeholders, respecting the rights of all, in the interest of territorial development.

However, digital data of general interest must not impinge on fundamental rights such as privacy, confidentiality, intellectual property and industrial secrecy.

## 8 Data interoperability and portability

### Promoting data exchange and use, and *technical agnosticism*

The value of data lies in their ability to flow and be shared. This fluidity cannot be achieved without technical *interoperability* resulting from adherence to understandable, documented and recognized standards. Accordingly, we must ensure that content is based on a standardized and immediately understandable description of the data, and ensure the interoperability of digital data, where applicable. Montréal is committed to promoting the procurement and development of systems that allow data access and transfer.

This interoperability is facilitated by the ability to make these data accessible by different systems, known as *portability*. Portability entails promoting the use of open formats and avoiding those linked to a particular proprietary technology. Montréal is also committed to systematically considering open-source solutions, governed by a policy and requiring access to data in accessible formats, as well as developing appropriate procurement to ensure that the city owns and controls the data.

## 9 Transparency

### Forging a bond of trust

The entire life cycle of digital data is of interest to the community. Data practices must be documented and made public, including all data collected and the rules applied to it. The usage of these data, including when they are involved in decision making, must be communicated. The commitment to transparency covers a set of approaches aimed at sharing the data collected and their use, including algorithms.

Montréal has adopted an open data policy to specify its duties with respect to openness and to clarify the rights to access these data. In addition to pursuing this approach, the city undertakes to publish more data that addresses the community's concerns while respecting fundamental rights, and to put in place tools to make all information on management methods, risks, guarantees and rights related to data processing accessible and understandable to everyone.

# Build a brighter future through data

Leverage data for inclusive  
and equitable urban  
development by creating  
spaces for exchange  
and experimentation.



## **10 Universal access**

### **Bridging the *digital divide***

Citizens' rights imply fair treatment for everyone. However, access to resources, opportunities or benefits procured by private and public services differ according to specific conditions (e.g. availability of technology in one's neighbourhood, technological knowledge). For everyone to benefit from public data, this common asset must be available and documented to facilitate understanding, both of what the data represent and the context in which they are produced and used.

The city wants to ensure that the public has the means and tools to access and understand data. We are therefore committed to deploying all the decisive levers to guarantee democratization and digital equity, notably by promoting digital literacy around data to facilitate their use in civic life and the emergence of innovative solutions. For example, the ability to understand data can be democratized by offering the community digital skills development and by publishing reports and explanations on the use and visualization of data as needed.

## **11 Public Participation**

### **Involving the community and facilitating the creation of social values**

The principles presented in this document act as a guideline. However, given the variety of situations and the evolution of digital technology, they cannot be used to make a definitive decision. This commitment proposes to ensure the application of this charter, responsible collection and processing of data, by opening dialogue with the community. Montréal is committed to putting in place deliberative mechanisms that include representatives of civil society, to enable collective decisions to be made about the data.

Public participation refers to the possibility of collectively imagining new solutions, supporting the implementation of tools and mobilizing digital practices to meet societal challenges. Data can help support activities such as hackathons, design sprints and incubators by strengthening innovation capabilities and leveraging collective intelligence. We are committed to reinforcing the community's capacity for innovation by supporting inclusive approaches based on stakeholder engagement and cooperation around a targeted issue.

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## Framed experiment

### Daring to push the limits of innovation

Data can provide deep insight into urban universes. Exploring the innovative ways that data can respond to major urban challenges is crucial, especially by pushing the limits through spaces for experimentation. When testing hypotheses in experimental projects, it may not always be possible to strictly follow some of the statements in this document. However, we will avoid drifting toward practices that may jeopardize human rights. These departures must be the exception and, when authorized, will be implemented in a controlled manner, i.e. for a limited period of time. In addition, their use must be well documented and transparent. The benefit of such exemptions must be clearly demonstrated, and validated by a neutral deliberation mechanism that is not in conflict of interest with the experiment.

In tandem with the public and private stakeholders involved in the public space, the city is committed to defining the conditions for implementing, evaluating and deploying experiments, and in particular ensuring that individual automated decisions about public service users are not made without human validation.

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## Ecological Transition

### Controlling our environmental footprint

Although information technologies represent a lever for the emergence of new solutions for an ecological transition, the environmental impact of digital technology should not be neglected, especially the storage, equipment and infrastructure implications. Data must be harnessed to tackle the climate crisis, by applying principles of *ecological sobriety*. In particular, the city aims to further promote data sobriety (lean IT) in its public policies, procurement and collaborations to transform practices. A mature digital market should be nurtured in order to encourage environment-friendly solutions based on responsible procurement processes.

Montréal is also committed to fostering a greener digital environment by conducting experiments on a smaller scale to support urban resilience and reduce greenhouse gases. The data must be used to raise community awareness of key environmental issues in order to generate greater commitment to ecological transition.

# Conclusion

This work is the result of a vast collaborative effort guided by the conviction that digital data are an important driver of progress, and that their role in shaping the city of tomorrow should not be underestimated. This document affirms that digital data must be managed at all stages of their life cycle, given their pivotal role in urban development.

We are committed to operationalizing this charter through municipal mechanisms such as action plans and policies, and by acting as an ambassador for responsible and sustainable data management in communities.

## **For more information on initiatives already in place in Montréal or to which the city subscribes:**

Open Data Policy

Policy Concerning the Use and Development of Open Source Software and Hardware

Cities for Digital Rights

Montréal's Resilient City Strategy

GBA+ Application Guide (in French)

Montréal Declaration Responsible IA

## **For more information on the charter and the various initiatives related to data in Montréal, contact:**

[lab.innovation.urbaine@montreal.ca](mailto:lab.innovation.urbaine@montreal.ca)

or visit [laburbain.montreal.ca](http://laburbain.montreal.ca)



# Glossary

## **Technical agnosticism**

Achieving independence vis-a-vis tools, platforms or technology providers, which implies choosing suppliers freely, as opposed to being locked to a particular technology provider.

## **Gender-Based Analysis from an Intersectional Perspective (GBA+)**

A process and tool that assesses the realities of diverse sets of people when implementing initiatives. GBA+ aims at measuring and anticipating the differentiated effects that actions and services will have on women, men, and non-binary people, as well as on the most vulnerable groups. This approach acknowledges that discrimination can occur in multiple areas, and that an overview of identity factors that may give rise to discrimination is necessary to meet the needs of a diverse population.

## **Anonymization**

A technical procedure that consists of changing the content or structure of data to ensure that all information of a sensitive nature or that allows a person to be identified is deleted or modified. This procedure makes it impossible to re-identify natural or legal persons, while retaining the meaning of the data such that it can be used for specific purposes.

## **Consent**

Free, explicit and informed expression of will by which an individual agrees to the collection and processing of personal data concerning him/her.

Free: Does not imply any pressure to subscribe to a service and, if certain information is not crucial, allows the individual to obtain the portion of the services that do not require such information.

Explicit: Clearly states the conditions of the data collection.

Informed: Clear understanding of the facts, implications and consequences of the collection of their personal data (limits, users, risks and duration)

## **Data life cycle**

Necessary steps for sound data management. There are several data life cycle models in the literature. A life cycle must be able to be broken down and operationalized in a particular way for a specific data type or context within the organization.

## **Discrimination**

Distinction, exclusion or preference on the grounds of categories prohibited by the Charter of Rights and Freedoms (sex, skin colour, ethnic or national origin, religion, gender identity or expression, disability, social condition, etc.).

## **Data of general/territorial interest**

Data that serve the interests of the public good and thus the community in the municipal context (territorial interest). To promote this collective good, data of general interest are shared with the territorial administration in a framework that respects the rights of all and in the interest of the development of the territory in order to allow public administrations to assume their respective sovereignty or, conversely, to allow third parties to depart from or limit the application of these powers.

## **Biometric data**

Information on physical characteristics specific to an individual. There are three main categories of biometrics: morphological, based on the identification of particular physical traits (including fingerprint, hand geometry, facial, retina and iris recognition), behavioural, based on the analysis of a person's behaviour (such as signature, voice print, gait or typing style), and biological, based on the analysis of biological samples (such as DNA, blood, saliva, urine, and odours).

## **Open data**

Digitally structured information resources made available to the public under an open user license.

## **Citizen's rights**

A fundamental right under the Canadian Charter of Rights and Freedoms, including legal and equality rights.

## **Digital divide**

The disparity within the population regarding access to digital technologies, due either to a lack of equipment and services, or a lack of knowledge and understanding of these technologies.

## **Personal identification**

Technique or use of technology that can lead to the specific identification of an individual, directly or indirectly. For example, a vehicle license plate reading or recognition based on the analysis of facial images, gait, posture, etc.

**Connected urban infrastructures**

Refers to sensors and other connected urban assets associated with the Internet of Things (IoT) allowing fast information feedback from the field. More and more connected objects are being deployed in the public space in order to intervene and efficiently solve urban issues. They include traffic lights, counting stations, air and water quality sensors.

**Interoperability**

Ability of data to be used, manipulated, and processed by different information systems by minimizing data preprocessing.

**Digital Literacy**

Ability to understand and use digital communication technologies, including digital data, in everyday life to achieve personal goals and to expand one's knowledge and abilities.

**Deliberative mechanisms**

The process by which a group receives and exchanges information, critically examines an issue and reaches an agreement that will guide decision-making.

**Portability**

The usability of data by different systems rather than in the proprietary format of a single tool: free circulation of data, ability to control it, standardized formats supported by available tools that promote the ability to reuse these data in many contexts, and maximally ensure independence from solution and technology providers (vendor lock).

**Facial recognition**

Type of personal identification based on the analysis of a facial image (in a video or still image).

**Ecological sobriety**

Promotion of technological options and conservation principles that limit the environmental impact of the physical infrastructure of the digital world (e.g. metal extraction, energy resources, CO2 emissions, recycling of materials).

**Digital sobriety**

Philosophy that supports the collection and storage of only the necessary and sufficient data for a specific period of time. This approach contrasts with compulsive data storage, motivated by the possibility that a use for the data will be found later. Note that keeping the collection and storage of personal information to a minimum is a legal obligation.<sup>1</sup>

**Territorial sovereignty**

The ability of a public body to be able to fulfil its duties in the territory it serves.

**Information system**

A set of resources (physical and software, technological or application) allowing the collection, storage, manipulation, and processing of data in order to support the activities of an organization.

**Personal identification technologies**

Automated applications that use artificial intelligence to identify a person and create a representation based on an amalgam of information: identity cards, signature, recognition of physiological characteristics such as face or voice, that requires further analysis. These technologies are based on deep learning that can distinguish individuals through images or video.

**Traceability**

Ability to track data through each stage of its life cycle (from collection to destruction), and identify how it was processed, along with the people or programs that have read or used it.

**Individual traceability**

Ability to follow an individual's movements directly or indirectly in real time or after the fact, which can lead to the identification of the individual, and thus to surveillance.

**Fair treatment**

Recognition of the existence of different realities and the desire to provide the same opportunities for access, use and sharing of digital data.

<sup>1</sup> Reference to the Act respecting access to documents held by public bodies and the protection of personal information.

Montréal 

[ville.montreal.qc.ca](http://ville.montreal.qc.ca)