2023–2026 Data Strategy for the Federal Public Service

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Executive summary

Data is an important part of everyday life that is essential to providing Canadians with the services and information that they need. Good data practices allow the government to produce stronger and better-informed policies, as well as improved delivery of effective, equitable and inclusive programs and services, among many other benefits.

The COVID-19 pandemic highlighted the importance of making high-quality data easily understandable and accessible. It also accelerated a shift towards working, learning and engaging with government online. To respond to the rapidly evolving needs of people and businesses across the country, government organizations worked together to quickly develop and deliver new services. This showed the importance of a strong data foundation for the public service to improve efficiency and responsiveness.

A clear, results-driven data strategy is necessary in a 21st century government. The public service must lead by example in the management, security and use of the data that Canadians entrust to them. As such, it is essential to build and maintain public trust through transparent data practices and the protection of privacy in accordance with policies and legislation.

In 2018, the public service published the [Data Strategy Roadmap for the Federal Public Service](#). This strategy served as a guiding star in setting "a foundation so that the Government of Canada creates more value for Canadians from the data we hold," and drove the use of data to improve how government interacts with people, businesses, organizations and other partners.

Five years later, the 2023–2026 Data Strategy for the Federal Public Service (the Strategy) sets renewed priorities, goals and expectations for the federal public service. The Strategy:

- outlines the current policy landscape that relates to data
- describes a long-term strategic vision
- identifies actions over the next three years that will move the public service closer to that goal
- highlights real-world case studies that demonstrate value for Canadians because of the better use of data

Building on existing progress and work across the public service, the Strategy is organized into four mission areas focused on concrete, achievable and high-impact opportunities:

- Proactively considering **data by design** in all stages of government initiatives
- Effectively stewarding **data for decision-making**
- Improving user experience and maintaining trust by **enabling data-driven services** through data that flows securely where it is needed
- **Empowering the public service** with the talent and tools it needs

The implementation of the Strategy has wide-ranging implications for federal organizations. It will require a coordinated approach among those responsible for delivering policies, programs and services and senior leaders with dedicated responsibilities for data, such as departmental chief data officers.

In the immediate term, senior leaders, including deputy ministers, should take action to embed data activities and needs in initiatives from the start, inform their decisions using disaggregated data, and assess the data skills needed for managers and teams.

Publication of the Strategy with a focus on outcomes for Canadians is just the beginning; continued collaboration and engagement within the public service will be critical to success. Over the next three years, progress will be measured to ensure that the public service continues to focus on what matters to advance the data landscape. This includes adapting to changes and continuing to build greater knowledge from data so it can provide greater benefits for Canadians and support public good.

Introduction

Context

Public servants develop and deliver programs and services and provide evidence-informed advice to decision-makers. These activities involve the production, use and management of data. As new technologies reshape the lives and work of people around the world, the volume of data continues to grow exponentially. For the benefit of the public, this data can be responsibly used by the federal public service to:

- be more effective and efficient
- better address complex social issues
- better target services to the people who need them
- help workers adapt to a changing labour market

Ensuring that privacy is protected, and that data is used ethically is essential to public trust. A public service that can manage, safeguard and use data effectively is well equipped to harness opportunities to the benefit of Canadians.

There has been significant progress since the publication of the first Data Strategy Roadmap for the Federal Public Service in 2018, including:

- changes to government-wide policies
- development of departmental data strategies
- appointment of the first Chief Data Officer of Canada
- appointment of chief data officers in many government organizations

Each of these steps has helped transform how the public service operates, makes decisions and delivers services. Growing networks at the management and working levels, and dedicated efforts to advance data literacy, are nurturing a culture that values data and are helping to harmonize approaches to data management and use. Overall, progress made over the last five years has set the foundation for further change.

Scope

The Strategy supports government-wide priorities and aims to align and shape the landscape of federal, national and international digital and data-related initiatives (see appendices 2 and 3). This landscape includes advancing digital transformation in the Government of Canada (GC) by complementing and enhancing Canada's Digital Ambition 2022 and building off the foundation of the *Policy on Service and Digital.*

The Strategy expands on the Digital Ambition's theme "Data-enabled digital services and programs," with a focus on maximizing the public value of data and information (Priority 2.1) and managing and using data and information as strategic assets (Priority 2.3), while protecting privacy and being transparent. The Strategy also supports fully digital delivery by managing a government-wide culture shift (Priority 4.1) through actions to build the foundation for improving data literacy across the GC.

Other strategies are also being developed, tailored to support specific data domains, such as health and climate, or functional areas across government, such as human resources (HR) and financial management. Many government-wide initiatives, such as the Disaggregated Data Action Plan and the 5th National Action Plan on Open Government, are proceeding in parallel.

The public service is also addressing other complex challenges such as human resource classification, legislative change and procurement of large-scale technical infrastructure. Although these are not discussed in detail as part of the Strategy, they are essential to the public service's use of data as a strategic asset and will need to be monitored to ensure alignment. Appendix 2 provides more information on the Strategy's relationship to other government-wide initiatives.

Data in service of fairness and inclusion

Addressing gender gaps, racism and systemic barriers requires data to understand the issues and to measure progress to ensure that those gaps close over time.

Statistics Canada (StatCan) is working to bring fairness and inclusion to decisions that affect the people of Canada. Through the Disaggregated Data Action Plan announced in Budget 2021, StatCan will enable the production of the data that is needed, while maintaining its commitment to protecting the privacy of Canadians and confidentiality of their data. This work provides better insights into the lived experiences of specific population groups such as women, Indigenous Peoples, racialized Canadians, visible minorities, 2SLGBTQI+ communities, and Canadians living with disabilities, and allows for critical Gender-based Analysis Plus (GBA Plus). Data may also be broken down by geographic level as well as urban and rural populations.

StatCan is currently developing whole-of-government standards to enable adoption and support consistent collection and disaggregation of data to support public good.

The Strategy is the result of extensive consultation and input from employees and organizations across the federal public service. The Strategy aims to be broadly applicable across domains, departments and agencies, and to the public service as a whole. All the diverse types of data used in the public service are in scope. This includes personal information, which must be managed in accordance with federal policies and legislation to foster trust in the public service as a data steward.

Federal organizations are encouraged to review the Strategy and align their own plans and strategies, improve their internal and external services and operations, and contribute to GC-wide efforts. It will also be important to coordinate across federal organizations where appropriate and share best practices.

Funding, authorities and procurement of digital technologies required to achieve the actions in the Strategy will be pursued or re-allocated, as appropriate, at the project or department level.

Supporting better health outcomes for Canadians: Pan-Canadian Health Data Strategy

The Pan-Canadian Health Data Strategy creates a new enabling environment where collaborative work would support the creation of a world-class health data system, enabling Canadians to harness health data to achieve better health outcomes.

Building on lessons learned early in the COVID-19 pandemic, in the fall of 2020, the GC, together with provinces and territories, began co-developing the strategy to improve Canada's collection, access, protection, sharing and use of health data. Co-development of the strategy included consultation and collaboration, informed by advice received by an external expert advisory group.

The GC has taken into account lessons learned from previous attempts at health data sharing. The strategy does not envision a large technology system or platform for data sharing for the whole country. Rather, the strategy would guide improvements in health data management in four areas: public trust and data literacy, governance, data policies, and interoperability.

Vision

The Strategy will strengthen data-driven results and outcomes, driving the federal public service to consider data by design and effectively use data in decision-making and when enabling services, and to be empowered with the talent and tools it needs to do so.

The public service of the future must be one where data is more fully and seamlessly integrated into government structures, operations and decision-making, much like the management of financial and human resources. Data is truly a strategic asset. The strategic value of data is tied to how it benefits all the people and businesses served by the GC. These benefits are outlined in the framework below as desired outcomes, and the following theoretical examples (see text box below) describe a future vision of how data may help to achieve each of these outcomes.

Future vision: data enables better outcomes for people in Canada

In the future, people and organizations receive government services when and how they want them. Data makes this future possible because it is stewarded and used by the government for the public good, such

that **effective, equitable, ethical, and inclusive services, programs and policy** are delivered.

When an emergency occurs, such as unprecedented flooding, the government's response is underpinned with **enhanced evidence-informed decision-making**. Data is readily available and integrated into assessments of the issue and how it affects resources, the economy, infrastructure and ultimately people and their communities. As a result, people and organizations receive the support they need quickly because the government can respond in a coordinated and timely way.

Prospective immigrants to Canada know where they are in the application process because their own information is made proactively and securely available to them. Data helps people and businesses in Canada quickly identify and sign up for tax rebate programs they are eligible for, and applications are proactively processed in real time and without bias. Transparency and openness in how the government operates and uses data helps people feel that they have a **trusted and accountable government** that can deliver for them while protecting their privacy.

Good data spurs innovation and helps people make informed choices about things that matter. The private sector and civil society extract **greater public value from GC open data** by leveraging data on things like housing, transportation, and energy to develop tools that help the public confidently make decisions in their everyday life.

Disaggregated data is used to develop skills programs that strategically align with local job needs. Impacts on marginalized groups are better understood and programs and services are constantly improved because data is embedded throughout the life cycle of a project from planning to measuring and reporting on results.

Indigenous data sovereignty is a key component of Indigenous self-determination, supporting effective program and service design by Indigenous Peoples that reflects their communities' unique needs, perspectives and circumstances.

Framework

The data strategy framework is similar to that of the original strategy, with updates to reflect evolution over the past five years and to provide a sharper focus. Data as an asset spans the foundational pillars of talent, governance, and processes and tools, enabled by strong communication and effective change management. The guiding principles reflect foundational values and concepts.

Figure 1: Data Strategy Framework for the Federal Public Service

Data Strategy Framework for the Federal Public Service

Guiding Principles

- Client-centered
- Purposeful
- Trusted
- Enabling
- Ethical
- Open
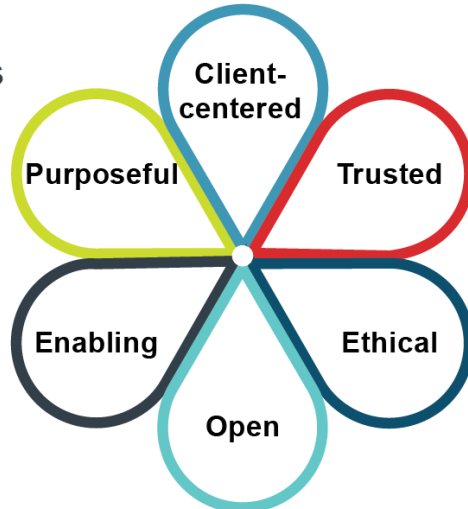
Desired outcomes

- Effective, equitable, ethical and inclusive services, programs and policy
- Trusted and accountable government
- Greater public value from data
- Enhanced evidence-informed decision-making
- Support for Indigenous data sovereignty

Culture, communication and change management

Data as an asset

Data is fully integrated into how outcomes are delivered to Canadians and valued like any other critical asset.

Foundation

Talent	Governance	Processes and tools
The government has the talent and capacity it needs to leverage data to inform its decisions.	Governance is effective and ensures that data is managed horizontally and holistically as a strategic asset.	Processes and digital infrastructure enable secure cross-governmental integration and the use of data for the benefit of Canadians.

▶ Figure 1 - Text version

Support for Indigenous data sovereignty

Support for Indigenous data sovereignty is a government-wide priority that contributes to Indigenous self-determination. Over the next three years, work co-developed with Indigenous partners will lay a strong foundation for a whole-of-government approach to support First Nations, Inuit, and Métis Nations as they realize their respective visions for data sovereignty.

Indigenous Peoples have long recognized and emphasized the importance of data, not only to the equitable allocation of resources and the design and delivery of effective services, but also as a key part of their cultural heritage and an important means of capturing and sharing their collective stories. The recognition of the importance of Indigenous control over their own data is often referred to as Indigenous Data Sovereignty.

Data capacity is foundational to the advancement of data sovereignty. The "Transformational Approach to Indigenous Data" is a multi-year government commitment supporting First Nations, Inuit, and Métis Nations to develop the capacity they will need to collect, manage and use their own data for the benefit of their Peoples.

During the first phase (2022–23 to 2024–25), First Nations will establish Data Champion Teams. These teams will engage with rights holders to develop plans for and establish the First Nations–led network of national and regional information governance centres envisioned in the 2020 First Nations Data Governance Strategy. Inuit and Métis Nations will develop their own data strategies, identifying their long-term data and data capacity needs based on their unique histories, priorities and perspectives.

Missions

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While the public service has made progress, there is still work to be done to improve data use and management. The four missions in the Strategy were chosen to focus efforts on actions that are concrete, achievable within the

next three years, and have the greatest potential return on effort. These missions and actions are meant to position the public service to realize better outcomes for Canadians.

Many of the actions build on work from organizations and groups across government that have shown leadership and made significant progress. The Strategy can increase the visibility of and scale these efforts for broader use. Other actions propose new activities that complement work currently underway or target specific challenges that need to be addressed to make way for future improvements.

Many of the missions and actions focus on the first steps needed to drive coordinated change across the public service. The actions are at various stages of development. Consultation, governance and development processes will be undertaken as appropriate within each initiative as work advances. This work will require collaboration and input from across the public service and will be successful only if all departments and agencies align and integrate the direction and intended outcomes of the mission areas into their own practices. More detail on departmental responsibilities will be included in the implementation plan that will follow the Strategy.

Summary

These four missions show the work that will be in focus over the next three years (2023–2026):

Missions overview

Data by design	Data for decision-making	Enabling data-driven services	Empowering the public service

Data needs are proactively considered when designing initiatives

1. Clarify data leadership responsibilities within and across the Government of Canada
2. Embed planning for data activities in policy, program, and service development, delivery, monitoring and evaluation
3. Provide clear expectations from central agencies related to appropriate resource allocation for data needs and operations in program, policy, and service development

Data is stewarded for effective integration into analysis to inform insights

1. Establish a data stewardship model for the management of data and standards across the federal government
2. Set expectations and implement common practices
3. Transform data into insights

Data flows securely where it is needed to improve user experience while maintaining trust

1. Drive service design, iterative service improvements, improved user experience and better outcomes through effective data flows
2. Prioritize open and responsible data flow to improve service to Canadians
3. Set clear expectations for responsible, transparent and ethical data stewardship to maintain trust
4. Advance a whole-of-government approach to the management and sharing of Indigenous data

Teams are equipped and supported to effectively integrate the talent and tools they need

1. Promote and improve data careers in the public service
2. Provide opportunities to improve the data skills of all public servants
3. Ensure that public servants are equipped with the appropriate tools to support their work

The mission areas and actions under each are at the heart of the Strategy, and are found in the section "Mission areas: Data Strategy 2023–2026," and summarized in an "at-a-glance" format in Appendix 1.

Implementation

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Approach

To drive the actions outlined in the Strategy and keep the federal public service accountable, a detailed implementation plan with clear deliverables will be released in late spring 2023. This plan will include timelines, milestones, key performance indicators and a communication approach. The communications will raise awareness of work underway, help coordination across initiatives, and give stakeholders information and tools to successfully complete deliverables. Communications efforts will also support long-term change management across the federal public service.

To successfully coordinate this work, there is a need for dedicated capacity to support reporting, ensure coordination across the public service, and enable implementation of the missions and actions. Implementation of the actions will use existing authorities, for example through the responsibilities prescribed in the *Policy on Service and Digital*. Mechanisms to keep the public service accountable will include a strong governance structure supported by senior-level bodies, quarterly tracking and status updates, and an annual progress report prepared by the Treasury Board of Canada Secretariat. This approach is similar to that of other countries, where updates on key milestones and deliverables are communicated through annual government reports or action plans.

Expectations of federal organizations

Federal organizations should review the Strategy and look for alignment opportunities when updating their organizational strategies. The Strategy recognizes that organizations and data domains across the government are vastly different from each other, hold various breadths and depths of data, and are all at different stages of data maturity. As such, prioritization and implementation will necessarily vary among organizations, as will their ability to participate in advancing specific initiatives. The opportunity to be involved at a more detailed level will be explored with organizations in the development of the implementation plan.

That said, there are some common and immediately actionable areas which all organizations should be prioritizing:

- Embedding data activities and needs at the outset of initiatives, including reflecting data resourcing needs in Treasury Board submissions and Memoranda to Cabinet
- Striving to disaggregate data to the lowest level needed to enable service improvement that respects privacy and data security requirements
- Identifying the specific barriers that are limiting the ability to share data
- Improving management and governance of data related to Indigenous Peoples
- Ensuring access to data tools for data specialists and all public servants
- Assessing data skills needs for public servants and embedding data into HR training plans

Departments and agencies should prepare to align with GC-wide direction on implementing:

- common approaches to data through stewardship models across operational areas like HR

- common data standards across the GC

Conclusion

Over the next three years, the implementation of the Strategy and the actions found under each of the four mission areas will help to advance the maturity of the GC as a data-driven organization. The actions are achievable within this time frame and will provide the best return on investment of time and effort by showing immediate impacts or by building foundational elements needed across the federal public service to support future efforts.

While the GC has made progress in managing data and digital efforts in recent years, the integration of data and technology to modernize services in other parts of Canadians' lives has advanced even faster. New energy is required across federal departments and agencies, in close cooperation with Indigenous Peoples, other levels of government and international partners, to serve Canadians credibly and in a way that maintains trust. Progress will be measured over the next three years and reported on in an open and transparent manner, with a view to adjusting the Strategy in 2026 to ensure continued and accelerating progress in serving Canadians as a modern, forward-thinking federal public service.

Mission areas: Data Strategy 2023–2026

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The missions aim to position the federal public service to responsibly use data to improve outcomes for Canadians and others served by the government. Across the four missions, broad areas of action are indicated in bold and are supported by more detailed, concrete actions. Each concrete

action is followed by the framework pillar (Governance, Processes and tools, Talent) that it supports. Throughout the missions, the term "departments" is used and is intended to include federal departments and agencies.

Mission 1: Data by design

Delivering services or helping people during a crisis requires an established data ecosystem, so the federal public service can use data strategically while ensuring that data and privacy are appropriately safeguarded. Having the right information at the right time is a significant challenge for many initiatives. This problem is often caused by insufficient planning for data needs from the outset. Whether it be designing, evolving or adapting a program, policy or service, planning for data needs at the start and integrating data throughout the initiative will enable timely monitoring, assessment, reporting and improvements to support better outcomes. There are three areas of action to improve proactive consideration of data.

1.1 Clarify data leadership responsibilities within and across the Government of Canada.

Clear accountabilities for data result in greater benefits for people in Canada. This is not only because of data-driven improvements in services, programs and policies, but also because of the trust that is built through appropriate data protection and management. Recent years have seen significant changes in data roles and responsibilities across the GC landscape. Many federal organizations now have chief data officers (CDOs) or people with similar duties. The first Chief Data Officer of Canada has been appointed to provide a central point for government-wide leadership on data and information management, governance and integration.

While the *Policy on Service and Digital* formalized some roles and responsibilities for data, it came into force in 2020 as the CDO role was still emerging. There remains a need for clearer guidance on the roles and responsibilities of executives with respect to data, not only for CDOs, but also for all executives with accountabilities for data.

The public service will establish clear accountabilities for data in planning and processes to ensure that individuals with data responsibilities are providing input to programs, policies and services as they are being established and managed.

a. Treasury Board of Canada Secretariat (TBS) will develop guidance on the roles and responsibilities of executives with accountabilities for data *(Governance)*
b. TBS will initiate a review of data responsibilities in the Treasury Board policy suite *(Governance)*
c. TBS will clarify roles and responsibilities, and interconnections between existing data bodies and activities *(Governance)*

1.2 Embed planning for data activities in policy, program, and service development, delivery, monitoring and evaluation.

To provide people in Canada with data-driven and responsive government programs, policies and services, data needs must be considered across the life cycles of initiatives, from development, through delivery, to evaluation. This requires understanding of how data may be used for multiple purposes, including consideration of disaggregated data requirements, such as for Gender-based Analysis Plus. CDOs are building the foundations to ensure that data needs are considered at the outset of an initiative's life cycle, and to ensure that they are consistently engaged early enough in that life cycle to

provide advice. It is imperative to close the gap between data experts and those developing and delivering policy, services, research, projects and initiatives.

> ## Supporting Canadians with better data by design
>
> To improve the generation of data insights and support evidence-based decision-making while protecting privacy, Canada Border Services Agency (CBSA) is putting in place a governance measure, or "Data Frame," in support of national security and public safety priorities. The aim of this governance measure is to ensure that data and analytics needs are scoped in at the beginning of all investment planning processes.
>
> The Data Frame is a series of questions to clarify the data and analytics needs of new investments and ensure that appropriate planning and funding is allotted to the work.
>
> Since data and analytics considerations are common to all GC organizations, the Data Frame and its implementation methodology can be reused and scaled across the federal public service.

The public service will insert data-related questions and criteria into the development of policies, programs and services.

a. Central agencies will provide guidance for decision-makers on accounting for, planning for and resourcing data across the life cycle of an initiative, from program, service and policy conception through delivery and end-of-life *(Governance)*

b. TBS will coordinate the development of training on raising the awareness of and familiarity with planning for data at the outset of

initiatives for teams responsible for policy, program or service development and delivery *(Talent)*

c. Departments will implement frameworks and processes to ensure that data is considered at the outset of initiatives *(Processes and tools)*

1.3 Provide clear expectations from central agencies related to appropriate resource allocation for data needs and operations in program, policy, and service development.

Insufficient planning for data across the life cycle of initiatives has been an obstacle to leveraging data's full potential in decision-making on topics relevant to people in Canada. Data must be available at the appropriate level of disaggregated detail, and its potential usefulness to other initiatives must be considered. There have been improvements in existing processes, such as the collection and tracking of data for performance measurement, and work is advancing to assess data resource implications in initiatives. However, there remain gaps in data planning across the life cycle of an initiative, which is essential for the allocation of resources.

The public service will embed data considerations into decision-making processes on funding, authorities and planning.

a. Central agencies will enhance the data-related challenge function and require departments to strengthen the consideration of data in Memoranda to Cabinet and Treasury Board submissions (*Processes and tools*)

b. Central agencies will provide guidance on strengthening the consideration of data, such as the identification of data activities that are needed throughout an initiative's life cycle, to inform appropriate resource allocation (*Processes and tools*)

c. Departments will implement a framework for the proactive consideration of data activities in Memoranda to Cabinet and Treasury

Ensuring the availability of data for decision-making

Considering long-term and ongoing data needs and costs in government initiatives ultimately leads to better outcomes for the people in Canada. Made up of experts, a new federal working group aims to address the challenge of assessing the financial implications of data activities in initiatives by reusing and scaling existing tools.

One scalable example, built by Immigration, Refugees and Citizenship Canada, is the Data-Works Costing Framework. This tool helps with resourcing requests by providing a realistic, justifiable and estimated level of effort (salary and non-salary costs) needed to govern, develop, report and share data. The Framework ensures that appropriate resources can be dedicated to the work required to ensure data serves as a foundational element in support of effective services, programs and policies.

Mission 2: Data for decision-making

From predicting the impacts of climate change, which can help governments proactively support farmers, to analyzing the unique housing needs across the country to decide where new housing is needed, the public service needs high quality data it can trust.

To measure what matters to people in Canada, support decision-making and spur innovation, a strong foundation is required to unlock the full potential of the data the government holds. There are three areas of action to improve the use of data in decision-making.

Data standards: key to improved reporting

The Public Accounts of Canada is an example of the value of a mature data framework and set of standards used to create high quality, reliable data. The Public Accounts of Canada reports on government financial transactions based on rolled-up financial data held by the Receiver General. The rolled-up data is based on departmental data.

The Public Accounts of Canada has a 24-year history of unmodified audit opinions, which is upheld by the required systems, processes and procedures that ensure that the right data is collected, combined and presented following governmental policies. Each department is responsible for applying common accounting standards and reconciling its transactions to those provided in the government-wide chart of accounts.

2.1 Establish a data stewardship model for the management of data and standards across the federal government.

To optimize the use of data in decision-making on issues that matter to Canadians, data must be stewarded with clear accountabilities, processes and common standards to support consistency, quality and sharing across the government. As GC organizations and domains develop strategies and standards to meet their unique needs, applying a whole-of-government approach to data stewardship and standardization may lead to greater insights, better support government priorities, reduce data duplication, enable interoperability, and increase operational efficiency.

The public service will define data domains that are best managed across the federal government and create the structures and processes to exercise effective stewardship over those domains.

a. TBS will develop and work with departments to implement a protocol identifying and assigning domain data stewards across the public service, with clear accountabilities for endorsement, approval and stewardship (*Governance*)

b. TBS will coordinate with departments to pilot stewardship models with concrete use cases, and explore the application of common approaches to data across internal operational areas *(Governance)*

c. TBS, supported by Indigenous Services Canada (ISC), will progress the development of government-wide standards on data interoperability that will further the ability of Indigenous Peoples to reclaim their traditional names, as per Truth and Reconciliation Commission Call to Action #17 (*Governance*)

2.2 Set expectations and implement common practices.

Making more connections with human resources data

Better data leads to better understanding, which supports better decision-making and greater efficiencies. The Office of the Chief Human Resources Officer (OCHRO) at TBS has been building out its data model to improve HR data management. By creating new connections between organizations and improving the usability of HR data, this initiative has been used to highlight the value of workforce data, define HR data stewardship on a government-wide level, and inform the development of central employee capabilities, such as the employee self-identification form.

Stewarding data effectively ensures that it can be found, accessed, integrated and (re)used appropriately. It will be critical to ensure consistent data quality and appropriate level of disaggregated detail, so that data-

informed decisions are representative of the diverse people, places and businesses served by the government. Various tools, guidance and frameworks to promote standards adoption that have been developed across government are ready to be piloted and scaled for GC-wide adoption. Clearly communicating expectations will help raise awareness of the value of standardization, enable the use of common standards across the GC, and strengthen federal capacity to inform decisions using disaggregated data in a legal and ethical manner.

The public service will set expectations on best practices and establish common data standards across the GC.

a. TBS will set expectations and work with StatCan and others to enable the use of common standards through the development of an evergreen list of standards for GC-wide adoption and the scaling of StatCan's Reference Data as a Service *(Governance/Processes and tools)*

b. TBS will set expectations and work with StatCan and others to enable data discovery, integration and reuse through the review and development of information management and data policy instruments such as the Treasury Board Standard on Metadata, development of a FAIR principles (Findability, Accessibility, Interoperability and Reusability) assessment tool, and guidance on assessment of existing data for reuse *(Governance/Processes and tools)*

c. TBS and StatCan will formalize and work with departments on guidance to support implementation of the recently developed GC Data Quality Framework *(Governance)*

d. Departments will enhance stewardship practices and reuse, including by adopting common standards, frameworks and leveraging guidance *(Processes and tools)*

2.3 Transform data into insights.

To make the best decisions for people in Canada based on thorough analysis, the federal public service needs to be able to integrate data held across the government. As the federal public service continually works across departments to deliver initiatives that impact people in Canada, decision-makers must have access to holistic analysis. Modern tools are critical to enable the use of data and to responsibly bring it together. While federal organizations and domains have been exploring solutions to enable data management, access and analysis, GC-wide approaches and guidance with respect to these tools are not available.

Interdepartmental data sharing for decision-making

To make the best decisions on complex issues impacting people in Canada, data from numerous sources must be considered. Live data access between departments allows us to know what data other departments hold and can help support decision-making across the government. With its Interdepartmental Data-Sharing initiative, Fisheries and Oceans Canada was able to demonstrate that direct and secure access to its data catalogue by other federal organizations opened the door to new possibilities for collaboration.

This cost-effective solution reduces duplication and uses web service standards and existing data infrastructure. Security and privacy considerations are integrated by default. The solution proved to be a feasible way to share data, which could be scaled across the GC to achieve priorities including open government, open data and Canada's Digital Ambition.

The public service will scale data integration solutions and infrastructure, such as data hubs, to make high-quality, integrated data available for exploration, use and decision-making.

a. Privy Council Office (PCO) and TBS will work with departments to strengthen data literacy by developing guidance on how to integrate data into senior-level briefings for effective decision-making *(Talent)*
b. TBS will bring departments together to explore the scaling of solutions such as data hubs that make high-quality, integrated data available for exploration, use and decision-making *(Processes and tools)*
c. StatCan will develop guidelines on building data hubs, evolving towards more formal guidance in the Treasury Board policy suite *(Processes and tools)*

Building trust in data for Canadians

Canadians rely on the Canadian Food Inspection Agency (CFIA) to make informed decisions about food, animal and plant products through access to quality data. Data quality creates trust with those who use it, and CFIA seeks to create that trust as part of its Data Asset Inventory (DAI)—a self-service catalogue of the agency's datasets. The DAI integrates both the Open Government checklist and CFIA's Data Quality Framework, a framework that aligns with its GC equivalent, which facilitates data sharing and reuse, and builds trust in the data.

Information gathered through this work informs a CFIA dashboard that gives scores on quality, value, availability, and Open Government eligibility to every agency dataset in the portfolio. This helps CFIA identify data assets to release to the public and allows for performance measurement of data and increased stewardship, which supports programs and business functions.

Mission 3: Enabling data-driven services

From sharing of information on major life events with provinces, to coordinated regulation of the transportation sector, to supporting new immigrants to Canada, the responsible, ethical and transparent sharing and use of data are key to enabling the delivery of better services to people in Canada.

To tailor programs, policies and services to the needs of different population groups and target delivery to those in greatest need, a variety of data is required to understand opportunities for improvement and economic and social impact. As data is increasingly used by the federal public service, transparent practices and privacy protection are essential to building trust and improving outcomes. There are four areas of action to make better use of data to improve services.

3.1 Drive service design, iterative service improvements, improved user experience and better outcomes through effective data flows.

The GC's Digital Standards, the *Policy on Service and Digital*, and the *Policy on Results* are helping to advance client-centred services informed by data. However, to inform service improvements that meet the needs of people in Canada, there is work to be done to improve data on the health of these services and how this data links together. Services that embed integrated data flows and associated analytical review into service management and improvement are emerging, though they are not yet widespread.

The public service will create high quality secure data flows that deliver data at the lowest level of disaggregation appropriate to enable increased understanding of clients, and to improve and tailor services, policies and programs.

a. Departments will ensure that they have the appropriate data and analytical capacity to support improved services, including service performance management and results reporting (*Talent*)

b. TBS will set expectations and departments will ensure that data is appropriately disaggregated, to enable increased understanding of clients to improve and tailor services, policies and programs, ensuring that they meet their needs while respecting quality, privacy and confidentiality (*Processes and tools*)

c. TBS will set expectations and departments will implement data flows that proactively inform service performance management leveraging user feedback, operational monitoring and reporting data *(Processes and tools)*

d. TBS will work with departments to identify best practices and common technical solutions and infrastructure that can enable secure data access and exchange (*Processes and tools*)

3.2 Prioritize open and responsible data flow to improve service to Canadians.

The government's response to the COVID-19 pandemic demonstrated that secure and open data flows between partners are essential to service delivery, yet can be challenging. Departmental stewardship capacity, cultural risk-aversion, real or perceived challenges in a complex rules landscape, and technology limitations may all contribute to reduced data sharing. Ongoing work such as *Privacy Act* modernization helps to ensure that the GC rules framework keeps pace with the changing digital and data landscape and may help to resolve some challenges; however, this will not address all the complex issues faced by the public service.

The public service will identify and address challenges to data sharing, both internally within the GC and externally with key partners.

a. PCO and TBS will coordinate departments in a review of real and perceived data-sharing challenges including frictions in existing legislation, leveraging concrete use cases leading to recommendations (*Processes and tools*)

b. PCO, TBS and departments will work with partners to explore opportunities to enhance data flow with provinces and territories, including to enable client-centred service delivery (*Governance*)

c. PCO and TBS will explore opportunities for federal regulators to set expectations for data stewardship and sharing among service delivery partners (*Governance*)

d. TBS will work with partners to promote data standardization to support data portability and interoperability across a digital credentials ecosystem (*Governance/Processes and tools*).

e. SSC will pilot data storage and collaboration solutions for unclassified data that meet the needs of scientific researchers and serve as an initial step towards exploring and validating the infrastructure requirements to enable improved data sharing between departments (*Processes and tools*)

3.3 Set clear expectations for responsible, transparent and ethical data stewardship to maintain trust.

Maintaining and building public trust remains a priority for the government as it evolves its methodologies for data collection, use and sharing of increasing volumes of data. The public service must be clear and transparent; proactively communicate; engage with diverse audiences; and provide information about how data is used, collected, stored and protected.

The public service must also ensure that its practices ethically safeguard data, respect diversity and inclusion, and seek to minimize biases. This includes identifying when data is derived from or consists of personal

information and protecting it according to policy and legislation.

In safeguarding data, the public service must also apply consistent and appropriate security classifications and plan for business continuity management. In addition, the public service must continually look for opportunities to maximize openness and transparency by default and improve public value through the release of open data, where possible.

The public service will establish the necessary safeguards to ensure ethical stewardship of data.

a. TBS and StatCan will develop a federal framework to convey principles and best practices on the ethical stewardship and use of data (*Governance*)

b. TBS will develop guidance that incorporates privacy and security requirements into the development and modernization of programs, activities and initiatives to address emerging data needs and evolving data practices (*Governance*)

c. TBS will set expectations and provide guidance and service standards to enhance transparency of data practices and adoption of open-by-design principles (*Governance*)

3.4 Advance a whole-of-government approach to the management and sharing of Indigenous data.

a. ISC, in collaboration with Indigenous partners, will develop, and TBS will integrate into policy, protocols and guidance for the identification, sharing, management and governance of Indigenous data to support self-determination and data sovereignty (*Governance/Processes and tools)*

b. ISC, in collaboration with Indigenous partners, will establish guidelines on training opportunities focusing on Indigenous-led training related to Indigenous Data Sovereignty (*Processes and tools*)

Mission 4: Empowering the public service

From delivering dashboards using Census data that help people make important decisions, to identifying invasive pests that could impact crops, to securing data and protecting the personal information entrusted to it by people and organizations in Canada, to producing reports on the flow of people and goods across Canada's borders, the government relies on a diverse public service that is equipped with the right talent and tools. The public service must continuously adapt to meet an increasing need for modern data skills, capacity and tools. There are three areas of action to empower the public service.

4.1 Promote and improve data careers in the public service.

In today's data-driven society, there is a strong demand for data talent to enable the public service to leverage and protect data to improve outcomes for those it serves. To help external recruitment efforts, the public service must improve how it communicates the unique opportunities and benefits of public sector work to impact the lives of Canadians. Internally, steps must be taken to invest further in developing existing employees and nurturing data talent. As data-driven services become the norm, talent must also reflect the diversity of the populations and communities served by the GC.

Harnessing talent to serve Canadians in the digital age

The GC Digital Talent platform is a new way of recruiting that can help the public service find the digital talent needed to deliver services and programs. The platform enables cross-government sharing of available talent and allows for the completion of processes more quickly by streamlining applications. It also helps managers hire digital talent by matching them with candidates in different pools. The launch of more recruitment campaigns will be incremental as the process continues to

evolve based on real-time feedback. Likewise, development of the platform is ongoing as new features and improvements continue to be added over the coming year.

The public service will develop tools to help with recruitment and retention of data talent, and clearly communicate the career paths and opportunities available in the public service.

a. TBS will develop a "branding" approach to enhance perception and appeal of public service data careers demonstrating the unique opportunities to make a difference (*Talent*)

b. TBS will lead a communications campaign promoting diverse data careers in the public service, offering GC-wide opportunities where feasible (*Talent*)

c. PCO and TBS will explore and engage with appropriate authorities regarding existing recruitment and promotion programs to create specific data opportunities and to hire and retain diverse data talent (*Talent*)

d. TBS will provide guidance to managers and HR teams to address government-wide HR practices, policies and processes that can be available and used across the GC to provide clarity on the variety of existing and emerging data roles at different levels within team structures, including common approaches to job descriptions and operational models (*Processes and tools*)

Continually improving and innovating for a stronger public service

The Government of Canada Data Community (GCDC) has created many new opportunities for federal data practitioners of all levels to connect; learn; exchange best practices; and improve data use, standards and governance. Launched in 2021, the GCDC is hosted at the Canada School of Public Service (CSPS) with support from more than 20 departments. Activities include publishing a monthly newsletter, charting entities in the GC Data Ecosystem, and co-hosting events like the GC Data Conference and Data Governance and Standardization Series, which each attracted over 7,000 participants. Data culture innovation is also enabled by engaging the community in co-creation projects, such as the development of a data competency framework for the GC and designing human-centred solutions to data talent needs.

4.2 Provide opportunities to improve the data skills of all public servants.

The idea that data literacy and skills are mainly the domain of data specialists is changing – they are relevant to all public servants. While data literacy products and upskilling the workforce has progressed in recent years, the public service has an opportunity to build on and more deeply entrench this work.

The public service will expand the opportunities for data skill improvement by making the necessary guidance available to existing public service employees, managers and HR teams.

a. TBS will develop guidance and tools to support managers and teams across the public service in their assessment of data skills needs (*Processes and tools*)

b. TBS will make guidance available for departments to embed data into their HR training plans *(Processes and tools)*

c. CSPS and StatCan will explore opportunities to formalize upskilling and reskilling, spanning a broad spectrum of data skills needs *(Talent)*

4.3 Ensure that public servants are equipped with the appropriate tools to support their work.

Public servants face ongoing challenges accessing the tools necessary to do their jobs, with inconsistent application of rules across organizations. These challenges range from access to sufficient computational power and storage; to the procurement of off-the-shelf software; to the full access to, maintenance of and use of open-source software tools. While security is non-negotiable, the current approach creates significant duplication of effort across organizations. These organizations are piloting new approaches to improve efficiencies.

Information sharing to create efficiencies

To help improve efficiencies and reduce duplicative efforts across the GC, the IT Strategy team at Employment and Social Development Canada (ESDC) has created a central repository of software assessment documents. Departments must conduct security, accessibility, privacy and architecture assessments before using new software. This often means that the same software gets assessed in different organizations. Launched as a pilot on the internal collaboration platform GCxchange, the repository already has over 100 assessments that can be accessed by all GC departments for information purposes, as a starting point to their own processes.

The public service will make the necessary infrastructure and tools available to equip public servants for effective, modern data work.

a. Departments will implement TBS-published guidance on basic software toolkits, open-source approaches, and repositories that should be available to all who need them (*Processes and tools*)

b. TBS will provide guidance on planning for data programs, including compute power, protected B environments and hardware (*Processes and tools*)

c. CSPS will coordinate a common location for departments to share information about the toolkits they have developed (*Processes and tools*)

Appendices

▶ In this section

Data Strategy 2023–2026

Appendix 1 – Missions at a glance

Mission 1: Data by design at a glance

	Governance	Processes and tools	Talent

1.1 Clarify data leadership responsibilities within and across the Government of Canada	a) TBS will develop guidance on the roles and responsibilities of executives with accountabilities for data	N/A	N/A
	b) TBS will initiate a review of data responsibilities in the Treasury Board policy suite		
	c) TBS will clarify roles and responsibilities, and interconnections between existing data bodies and activities		

1.2 Embed planning for data activities in policy, program and service development, delivery, monitoring and evaluation	a) Central agencies will provide guidance for decision-makers on accounting for, planning for and resourcing data across the life cycle of an initiative, from program, service and policy conception through delivery and end-of-life	c) Departments will implement frameworks and processes to ensure that data is considered at the outset of initiatives	b) TBS will coordinate the development of training focused on raising the awareness of and familiarity with planning for data at the outset of initiatives for teams responsible for policy, program or service development and delivery

| 1.3 Provide clear expectations from central agencies related to appropriate resource allocation for data needs and operations in program, policy and service development | N/A | a) Central agencies will enhance the data-related challenge function and require departments to strengthen the consideration of data in Memoranda to Cabinet and Treasury Board submissions

b) Central agencies will provide guidance on strengthening the consideration of data, such as the identification of data activities that are needed throughout an initiative's life cycle, to inform appropriate resource allocation | N/A |

		c) Departments will implement a framework for the proactive consideration of data activities in Memoranda to Cabinet and Treasury Board submissions based on the guidance provided	

Mission 2: Data for decision-making at a glance

	Governance	Processes and tools	Talent

2.1 Establish a data stewardship model for the management of data and standards across the federal government	a) TBS will develop and work with departments to implement a protocol identifying and assigning domain data stewards across the public service, with clear accountabilities for endorsement, approval and stewardship	N/A	N/A
	b) TBS will coordinate with departments to pilot stewardship models with concrete use cases, and explore the application of common approaches to data across internal operational areas		
	c) TBS, supported by ISC, will progress the development of government-wide standards on data interoperability that will further the ability of Indigenous Peoples to reclaim their traditional names, as per Truth and		

	Reconciliation Commission Call to Action #17		

2.2 Set expectations and implement common practices	b) TBS will set expectations and work with StatCan and others to enable data discovery, integration and reuse through the review and development of information management and data policy instruments such as the Treasury Board Standard on Metadata, development of a FAIR principles (Findability, Accessibility, Interoperability and Reusability) assessment tool, and guidance on assessment of existing data for reuse (*also Processes and tools)

c) TBS and StatCan will formalize and work with departments on guidance to support implementation of the | a) TBS will set expectations and work with StatCan and others to enable the use of common standards through the development of an evergreen list of standards for GC-wide adoption and the scaling of StatCan's Reference Data as a Service (*also Governance)

d) Departments will enhance stewardship practices and reuse, including by adopting common standards, frameworks and leveraging guidance | N/A |

	recently developed GC Data Quality Framework		
2.3 Transform data into insights	N/A	b) TBS will bring departments together to explore the scaling of solutions such as data hubs that make high-quality, integrated data available for exploration, use and decision-making c) StatCan will develop guidelines on building data hubs, evolving towards more formal guidance in the Treasury Board policy suite	a) PCO and TBS will work with departments to strengthen data literacy by developing guidance on how to integrate data into senior-level briefings for effective decision-making

Mission 3: Enabling data-driven services at a glance

	Governance	Processes and tools	Talent

3.1 Drive service design, iterative service improvements, improved user experience and better outcomes through effective data flows	N/A	b) TBS will set expectations and departments will ensure that data is appropriately disaggregated to enable increased understanding of clients to improve and tailor services, policies and programs, ensuring that they meet their needs while respecting quality, privacy and confidentiality c) TBS will set expectations and departments will implement data flows that proactively inform service performance management, leveraging user feedback, operational monitoring and reporting data d) TBS will work with departments to identify best	a) Departments will ensure that they have the appropriate data and analytical capacity to support improved services, including service performance management and results reporting

		practices and common technical solutions and infrastructure that can enable secure data access and exchange	

| 3.2 Prioritize open and responsible data flow to improve service to Canadians | b) PCO, TBS and departments will work with partners to explore opportunities to enhance data flow with provinces and territories, including to enable client-centred service delivery

c) PCO and TBS will explore opportunities for federal regulators to set expectations for data stewardship and sharing among service delivery partners | a) PCO and TBS will coordinate departments in a review of real and perceived data-sharing challenges, including frictions in existing legislation, leveraging concrete use cases leading to recommendations

d) TBS will work with partners to promote data standardization to support data portability and interoperability across a digital credentials ecosystem (*also Governance)

e) SSC will pilot data storage and collaboration solutions for unclassified data that meet the needs of scientific researchers and serve as an initial step towards exploring and validating the | N/A |

		infrastructure requirements to enable improved data sharing between departments	

3.3 Set clear expectations for responsible, transparent and ethical data stewardship to maintain trust	a) TBS and StatCan will develop a federal framework to convey principles and best practices on the ethical stewardship and use of data	N/A	N/A
	b) TBS will develop guidance that incorporates privacy and security requirements into the development and modernization of programs, activities and initiatives to address emerging data needs and evolving data practices		
	c) TBS will set expectations and provide guidance and service		

	standards to enhance transparency of data practices and adoption of open-by-design principles		
3.4 Advance a whole-of-government approach to the management and sharing of Indigenous data	a) ISC, in collaboration with Indigenous partners, will develop, and TBS will integrate into policy, protocols and guidance for the identification, sharing, management and governance of Indigenous data to support self-determination and data sovereignty (*also Processes and tools)	b) ISC, in collaboration with Indigenous partners, will establish guidelines on training opportunities focusing on Indigenous-led training related to Indigenous Data Sovereignty	N/A

Mission 4: Empowering the public service at a glance

|	Governance	Processes and tools	Talent

4.1 Promote and improve data careers in the public service	N/A	d) TBS will provide guidance to managers and HR teams to address government-wide HR practices, policies and processes that can be available and used across the GC to provide clarity on the variety of existing and emerging data roles at different levels within team structures, including common approaches to job descriptions and operational models	a) TBS will develop a "branding" approach to enhance perception and appeal of public service data careers demonstrating the unique opportunities to make a difference
			b) TBS will lead a communications campaign promoting diverse data careers in the public service, offering GC-wide opportunities where feasible
			c) PCO and TBS will explore and engage with appropriate authorities regarding existing recruitment and promotion programs to create specific data opportunities and to hire and retain diverse data talent

| 4.2 Provide opportunities to improve data skills of all public servants | N/A | a) TBS will develop guidance and tools to support managers and teams across the public service in their assessment of data skills needs

b) TBS will make guidance available for departments to embed data into their HR training plans | c) CSPS and StatCan will explore opportunities to formalize upskilling and reskilling, spanning a broad spectrum of data skills needs |

| 4.3 Ensure that public servants are equipped with the appropriate tools to support their work | N/A | a) Departments will implement TBS-published guidance on basic software toolkits, open-source approaches, and repositories that should be available to all who need them

b) TBS will provide guidance on planning for data programs, including compute power, protected B environments and hardware

c) CSPS will coordinate a common location for departments to share information about the toolkits they have developed | N/A |

Appendix 2 – Planned and ongoing Government of Canada initiatives

Figure 2: Relationship map of select planned and ongoing initiatives

Figure 2

LEGEND

- Government priorities
- Strategy
- Policy & legislation
- Related action plans
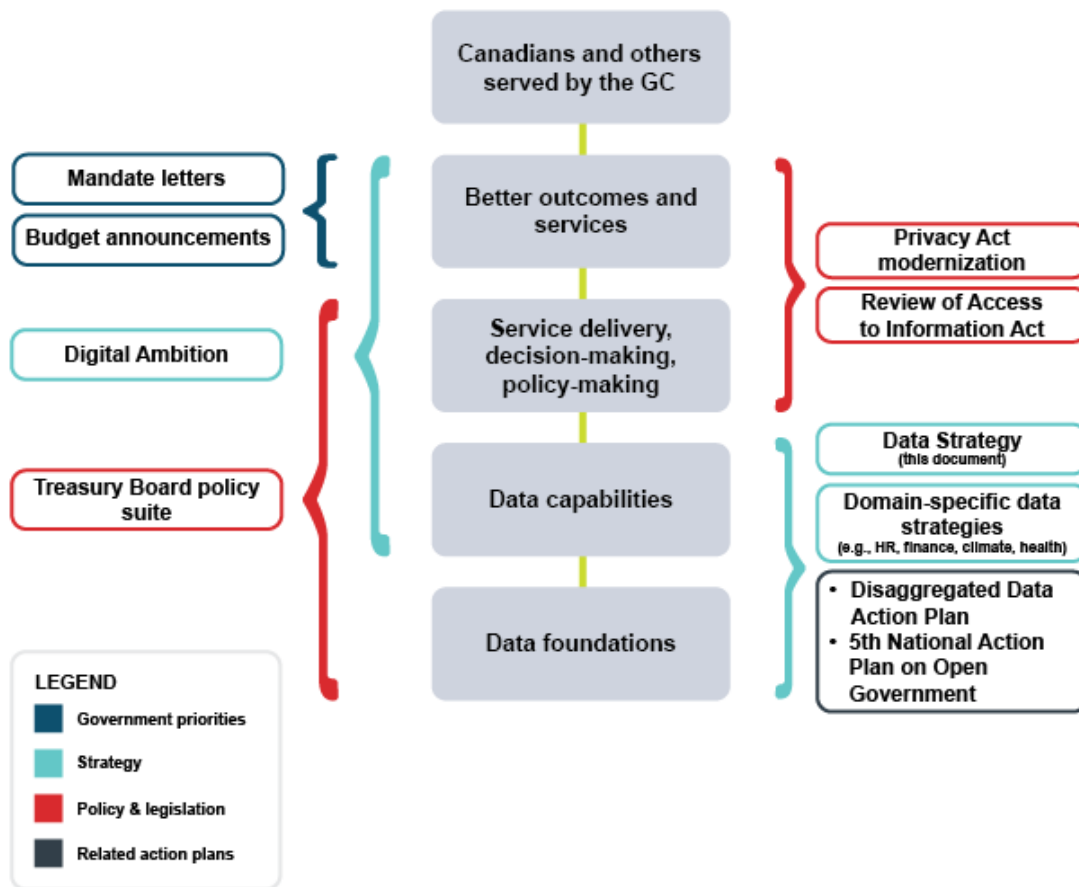
▶ Figure 2 - Text version

The following is a sample of planned or ongoing related initiatives with relevance to the Data Strategy Renewal. There are also some example domain-specific strategies (GCwiki):

Access to Information Review – Launched in June 2020, the Access to Information Review ensures that the access to information regime continues to provide open, accessible and trustworthy information to Canadians in the digital age.

Canada's Digital Ambition 2022 – A government-wide plan that provides a clear and long-term strategic vision for the GC to advance digital service delivery, cyber security, talent recruitment and privacy. The plan builds on

and aligns with the Digital Government Strategy.

The Government of Canada Digital Standards – Form the foundation of the government's shift to becoming more agile, open and user-focused. The Digital Standards guide teams in designing digital services in a way that best serves Canadians. These digital standards were co-created with the public and key stakeholder groups. They are living standards and will continue to evolve over time as the complexities involved in putting them into practice are better understood.

National Action Plan on Open Government – The fifth action plan is the result of extensive public consultation and co-creation with the public. It consists of five themes (climate change and sustainable growth; democracy and civic space; fiscal, financial and corporate transparency; justice; and open data for results) with associated commitments to making the GC more transparent and accountable.

Policy on Results – The *Policy on Results* sets out the fundamental requirements for Canadian federal departmental accountability for performance information and evaluation, while highlighting the importance of results in management and expenditure decision-making, as well as public reporting.

Policy on Service and Digital – An integrated set of rules that provides requirements as to how federal organizations manage service delivery, information and data, information technology, and cyber security in the digital era.

Modernizing Canada's *Privacy Act* – The *Privacy Act* focuses on the protection of personal information held by the federal government. The Department of Justice Canada is currently undertaking a review of the *Privacy Act* to ensure that it keeps pace with societal and technological shifts.

Disaggregated Data Action Plan – Developed by StatCan, the action plan will lead to the production of detailed statistical information to highlight the experiences of specific population groups to enable more equitable programs and services.

Appendix 3 – Highlights from other jurisdictions

The following are examples of work from other jurisdictions.

In Australia's first national Data Strategy, the government highlighted the need for maximizing the public value of data, supported by good data management and governance practices. Access to the right data and analytics enables effective delivery of services to citizens. One example from the strategy showed that real-time data sharing between jurisdictions allowed governments to quickly respond to natural disasters and focus recovery efforts on areas most affected. Valuable lessons from these experiences can strengthen the government's capacity to prepare for future crises.

New Zealand has embedded upholding Te Tiriti as a central element underpinning the Government Data Strategy and Roadmap framework. The importance of authentic partnership and collaboration with iwi and Māori is highlighted in the strategy, supported by outcomes across the focus areas. For example, the Leadership focus area includes an outcome that Māori data governance is embedded in the data system and includes initiatives such as finalizing and implementing a Māori data governance model and developing guidance on Te Ao Māori perspectives on cloud storage.

Similar to the Strategy's action on prioritizing open and responsible data flow through a digital credentials ecosystem, Ontario's Digital and Data Strategy introduces a Digital Identity program to support user-centred

services. Digital ID is intended to make it easier for Ontarians to access online or in-person services (e.g., renewing a driver's licence or obtaining a business permit) without exchanging any physical documents.

A common theme seen across multiple strategies is the importance of promoting data skills across the public sector. The United States Federal Data Strategy, for example, supports this priority through initiatives including investing in training, tools and working groups and exploring joint hiring initiatives with the US Digital Service to improve access to data talent. A Curated Data Skills Catalog was created with a common vocabulary of data roles and skills in the federal data ecosystem. This tool has helped agencies develop training programs and competencies for managing data as a strategic asset.

Appendix 4 – Glossary of terms

A glossary to promote a common understanding of terms used in the Strategy is posted on GCwiki for collaboration and knowledge sharing.

Date modified:

2023-04-19