



Ingenium

Canada's Museums of Science and Innovation
Musées des sciences et de l'innovation du Canada

Summary of the
CORPORATE PLAN
2019–2020 to 2023–2024

Summary of Operating and
Capital Budgets
2019–2020

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EXECUTIVE SUMMARY

The National Museum of Science and Technology (NMST or the Corporation) safeguards the national science and technology collection and operates the Canada Science and Technology Museum (CSTM) the Canada Aviation and Space Museum (CASM) and the Canada Agriculture and Food Museum (CAFM) (“the museums”). Its current operating name is Ingenium – Canada’s Museums of Science and Innovation.

Since the start of the planning period, the Ingenium has known many successes, most notably, the renewal of the Canada Science and Technology Museum, which reopened on time and on budget in November 2017 to very positive reviews. Over 2019-2020, Ingenium will continue to build on the successes of its museums, travelling exhibitions, digital offerings, national initiatives and programs, to deepen its reach, connection and engagement with Canadians and citizens around the globe as it becomes a communications platform for science and technology. The Corporation will continue to use digital technologies and platforms, such as 3D scans, mobile apps and games, and open data, to redefine museum access in the digital era. The Corporation will grow its brand of participatory heritage both nationally and internationally to promote Canada’s science and technology innovation culture. By fostering collaborations and contributions from citizens, governments, industry, heritage organisations, research and educational institutions across Canada and abroad, the Corporation will continue to support the creation of diverse cultural heritage content that enriches the public sphere. The museums will continue to offer unique experiences and enriching learning opportunities whereby Canada’s scientific and technological past can inspire the innovators of the future. Ingenium will pursue the last year of its current strategic plan, with a focus on carrying out the activities listed under the strategic objectives (SOs) below.

SO 1: Best in Class – Collection supports access for the public and researchers to the collection, as well as ensuring the historical development and appropriate care of the national science and technology collection. Strategies and main activities include facilitating access to the collection, preparing the collection for the move into the Collections Conservation Centre and ongoing collection rationalization¹.

SO 2: Best in Class – Education and Exhibitions develops exhibitions and educational and public programming – including outreach – aligned with the Corporation’s mandate. Strategies and main activities include exhibition and programming development, science communications, and collaborations with academic, industry, and government partners on themes of science, technology, engineering and math (STEM).

SO 3: National and Global Reach grows the Corporation’s impact and brand awareness nationally and internationally. Strategies and main activities include pursuing its new branding awareness, growing digital outreach, expanding travelling exhibitions, and continuing the Let’s Talk Energy program.

SO 4: Sustainable and Profitable secures and maintains the financial resources, administrative infrastructure, and human resources needed for the Corporation’s success. Strategies and activities include updating business plans, increasing revenue, investing in IT platforms, and employee development.

SO 5: Renewed and Innovative Infrastructure ensures that the Corporation has appropriate, purpose-built facilities that enable the delivery of its mandate. Strategies and main activities include completing

¹ Collection rationalization is a procedure whereby understanding of a collection is improved through a systematic and strategic review of the artifacts to assess their continued relevance to the collection mandate. Otherwise, the objects are removed from the collection through a process called deaccessioning.

the construction of the Collections Conservation Centre (C3), which will provide proper environmental controls to preserve the collection, as well as create new spaces for collaborations on research, exhibitions, and digital initiatives.

as well as carrying-out health and safety-related recapitalization projects at CAFM and CASM, and developing proposals for addressing the CSTM long-term site renewal, a restoration and conservation hangar (CASM), a Food Innovation Centre (CAFM).

The most significant corporate-level risks facing the Corporation in 2019-2020 are (1) cost overruns for the C3 project and the inability to successfully complete the project with proper building and site functionality, (2) the loss of relevance due to limited capacity to invest in new programming and exhibitions on multiple platforms, and (3) endangering the national collection due to inappropriate storage conditions or during the move to the C3.

The majority of the Corporation's spending will be on salaries and operating its facilities that facilitate the delivery of its strategic objectives. The Corporation expects to maintain balanced budgets over the five-year planning period, with the exception of 2019-2020, when it will post a loss and access its equity to cover unavoidable, critical costs exceeding the Collections Conservation Centre project budget. Its operating budget for 2019-2020 will be \$38.737 million on a cash basis, funded from appropriations, revenues, sponsorships and contributions. Its capital budget of \$23.979 million for 2019-2020 will be used to complete the C3, other health and safety-related and lifecycle repairs and replacements to capital assets.

1.0 CORPORATE OVERVIEW AND GOVERNANCE

Ingenium – Canada’s Museums of Science and Innovation (Ingenium or the Corporation)² was established as a Crown corporation with the passage of the *Museums Act*, 1990. In addition to its enabling legislation, Part X of the *Financial Administration Act* sets out its authority and accountability framework as an agent Crown corporation.

As a consolidated Crown corporation, the Corporation relies on parliamentary-voted appropriations as its primary source of revenue. The remainder of its operational budget is provided by operational revenues and contributed income. (Detailed information is included in Section 4: Financial Planning and Statements.)

The *Museums Act* sets out the public policy role for all national museums, as well as the Corporation’s mandate. As a cultural Crown corporation, the Corporation operates at arm’s length from government with regard to operating and programming decisions.

PUBLIC POLICY ROLE

“plays an essential role, individually and together with other Museums and like institutions, in preserving and promoting the heritage of Canada and all its peoples throughout Canada and abroad, and in contributing to the collective memory and sense of identity of all Canadians;” and
“is a source of inspiration, research, learning and entertainment that belongs to all Canadians and provides, in both official languages, a service that is essential to Canadian culture and available to all.”

MANDATE

“To foster scientific and technological literacy throughout Canada by establishing, maintaining, and developing a collection of scientific and technological objects, with special but not exclusive reference to Canada, and by demonstrating the products and processes of science and technology and their economic, social and cultural relationships with society.”

MISSION

To collect, explore, and engage through science, technology, and engineering.

VISION

To inspire Canadians to celebrate and engage with their scientific, technological and innovative past, present and future.

The Corporation’s programs are intended to benefit all Canadians, with our primary users being families with young children, students, educators, and researchers. It is one of four national museum corporations operating in the National Capital Region (the Canadian Museum of History; the Canadian Museum of Nature; the National Gallery of Canada). Other federal bodies also deliver science programs. Provincial institutions advance science literacy through science centres, planetariums, and museums.

² The Corporation’s legal name is the National Museum of Science and Technology. Its commonly used name is Ingenium – Canada’s Museums of Science and Innovation, which is used publicly in communications, other than when the legal name is required. This new operational name and brand was launched in June 2017. Ingenium or the Corporation refers to the governing body of the museums.

1.1 Main Activities and Principal Programs

The Corporation grows and preserves a national collection of science and technology artifacts and archival materials. It operates three national museums in the execution of its mandate: the Canada Science and Technology Museum (CSTM), the Canada Aviation and Space Museum (CASM), and the Canada Agriculture and Food Museum (CAFM). The museums and collection are housed in 19 buildings in three sites in Ottawa. All three museum sites have space for exhibitions, programs, facility rentals and offices.

1.1.1 The Museums

The Canada Science and Technology Museum is Canada's only comprehensive science and technology museum. It reopened in 2017 following a major infrastructure modernization. Visitors can engage with 11 permanent exhibitions featuring over 3,000 artifacts, interactives, augmented reality experiences, a maker studio, demo stage, educational and public programs, temporary exhibit hall, and mobile apps.

The Canada Agriculture and Food Museum inspires visitors to engage in a unique experience: a demonstration working farm featuring hundreds of animals including heritage breeds, a dairy operation and honeybees. The Museum's operations, exhibitions and programs showcase the evolution of farming and the important relationships between the environment, science, technology, agriculture and the food and products we consume.

The Canada Aviation and Space Museum, located next to a working airfield, invites visitors to explore the impact of flight and space exploration on the transformation and development of Canada and the contemporary world. The CASM's programming and exhibitions bring stories of significant Canadian contributions to aviation and aerospace to life, and stimulates a lasting interest in these fields.

1.1.2 The Collection

The Corporation stewards an extensive collection of scientific and technological objects emblematic of Canadian ingenuity, representing over 116,000 3D artifacts and more than 2.1 million 2-D and archival materials. It is particularly rich in the areas of communication, manufacturing, natural and renewable resources, domestic and industrial technologies, scientific instrumentation and transportation. Its aviation collection is deemed among the best in the world. The Corporation curates and conducts research on the collection, resulting in compelling stories of how human innovation contributed to our modern world.

1.1.3 Outreach Initiatives

The interpretation of the collection informs and influences the Corporation's exhibitions and programming. The Corporation's outreach initiatives expand its ability to reach, connect, and engage across Canada, and represent Canadian science and technology innovation internationally. Outreach activities include:

- classroom resources and training teachers which support curricula;
- travelling exhibitions, displays, and artifact loans;
- programming at public events (e.g., fairs, Calgary Stampede) and community outreach;
- conference presentations and research publications sharing expertise;
- digital experiences: virtual exhibitions and tours, games and mobile apps;
- online platforms: the Ingenium Channel (an aggregator and interpreter of science and technology information), Open Heritage, Open Archives, and Open Data; and,
- national programs: *Let's Talk Energy*, and *Women in STEM*.

1.2 Corporate Governance Structure

1.2.1 Board of Trustees

The *Museums Act* provides for a Board of Trustees, consisting of up to 11 trustees (including a chair and a vice-chair), appointed by the Minister of Canadian Heritage and Multiculturalism with the approval of the Governor in Council. Compensation for the Board is determined by the Governor in Council³.

The Board serves as the Corporation's governing body and is accountable to Parliament for the affairs of the Corporation through the Minister of Canadian Heritage and Multiculturalism. The trustees, acting collectively as the Board, are responsible for providing strategic guidance to management and to oversee the business management, activities and affairs of the Corporation, ensuring that all the duties conferred on the Corporation by the *Museums Act* and Part X of the *Financial Administration Act* are carried out.

The full Board meets between four to six times per year. The Board also engages the public on an annual basis, communicating its mandate, priorities, and financial and programming results and plans at the annual public meeting.

Board of Trustees

Name, Region

Term

Dr Gary Polonsky, Ontario

January 14, 2010 to January 13, 2018* – Chair

Replaced by

Neil Russon, New Brunswick

May 9, 2019 to May 8, 2023 – Chair

Jim Silye, Alberta

June 18, 2010 to June 17, 2018* – Vice-Chair

replaced by

Marian K. Brown – Vice-Chair

June 30, 2019 to June 29, 2023

Dr C. David Desjardins, New Brunswick

February 5, 2015 to February 4, 2019*

Replaced by

Matthew A. Lafrenière, Ontario

May 21, 2019 to May 20, 2022

Michael A. Geist, Ontario

March 1, 2018 to February 28, 2022

A. Christian Idicula, Alberta

March 1, 2018 to February 28, 2022

Radosveta Ilieva, Quebec

³ <https://www.canada.ca/en/privy-council/programs/appointments/governor-council-appointments/compensation-terms-conditions-employment/remuneration-guidelines.html>

October 27, 2017 to October 26, 2020

Paul Johnston, Ontario
June 1, 2018 to May 31, 2022

Heather Kennedy, Alberta
June 13, 2018 to June 12, 2021

Andréanne Leduc, Quebec
October 27, 2017 to October 26, 2021

Virginia McLaughlin, Ontario
December 18, 2009 to February 20, 2020

Dr Marianne D. Sadar, British Columbia
October 27, 2017 to October 26, 2021

*Although the terms of Chair Dr Gary Polonsky, Vice-Chair Jim Silye, and Trustee Dr C. David Desjardins expired in 2018 and 2019, they continued to serve on the Board until their successors were appointed, as per the *Museums Act*.

1.2.2 Board Committees

The Board is supported by four committees: the executive committee; the governance committee; the finance, audit and risk management committee; and the major facilities committee. Each committee is governed by its own terms of reference. Committees meet on a quarterly basis. Each committee is accountable to the full Board through regular reporting that communicates activities and decisions, ensures timely and effective risk signalling, and facilitates responsiveness between the committees. The President and CEO of the Corporation is a non-voting member of all four committees.

The **executive committee** establishes the annual performance objectives of the President and CEO. In accordance with the government's performance management program for chief executive officers of Crown corporations, the Chair of the Board of Trustees is responsible for establishing an annual performance agreement with the CEO. At the onset of the fiscal year, the Board's Executive Committee prepares the CEO's performance agreement, which consists of objectives with performance measures aligned with the approved corporate plan as well as with current government priorities along the following categories: policy and program; management; shareholder and stakeholder relations; leadership results; and corporate results. The Board of Trustees is presented with quarterly reports on the CEO's performance. At year end, the Board prepares a written assessment of the CEO's performance and makes a recommendation to the Minister of Canadian Heritage and Multiculturalism with respect to a performance rating.

This committee also exercises full authority under exceptional circumstances should the full Board of Trustees be unable to meet in a timely fashion. The executive committee's membership consists of the Board's chair, the vice-chair and two additional trustees.

The **finance, audit and risk management (FARM) committee** oversees the Corporation's financial management controls, its practices and its information systems. The committee reviews and advises the Board of Trustees on the Corporation's five-year operating and capital plans, as well as the annual and quarterly financial statements. In addition to providing oversight of the risk management policies and

practices within the Corporation, the FARM committee also selects internal audits and reviews and advises the Board of Trustees on plans and reports from internal and external auditors. The committee is composed of no fewer than four trustees plus the Chair of the Board.

The **governance committee (GC)** monitors and reviews the governance of the Corporation regarding best practices for corporate governance and stewardship, and recommends appropriate changes to enhance corporate functioning and decision making.

The GC establishes and implements a formal training and in-depth orientation program. Training opportunities in areas such as corporate governance, museology and heritage conservation, and finance are offered to all Trustees to assist them in carrying out their roles effectively.

The GC reviews the Board's committee structure and oversees the Board's self-evaluation process. The Board annually assesses its capacity and evaluates its performance in an effort to strengthen governance practices. The assessment is based on the results of Board and committee effectiveness surveys that are completed anonymously by Board members. The chair of the Board informs the responsible minister of the surveys' general results.

The GC supports the Board's succession planning by ensuring that the Board's skills matrix is regularly updated and identifying any gap in skills, experience or representation. The gaps are communicated to government in the form of a needs assessment for future appointments. The GC is comprised of no fewer than four trustees plus the Chair of the Board.

The **major facilities committee (MFC)** is an ad-hoc committee that provides enhanced oversight of the Corporation's major infrastructure projects, as well as the long-term infrastructure plans for the CSTM, CASM and CAFM. The MFC is composed of no fewer than four trustees plus the Chair of the Board.

1.2.3 Executive Management

INGENIUM's daily operations are managed by the President and CEO, who is supported by an executive leadership team. The executive team includes the Chief Operating Officer, the Director General of each museum, the Vice President, Business Development; the Vice-President, Human Resources; the Vice-President, Public Affairs; and Vice-President, Collection, Research and Corporate Governance.

2.0 OPERATING ENVIRONMENT

2.1 Key Internal Environment Factors

Ingenium's greatest strength is its knowledgeable and experienced staff. For 2019-2020, the Corporation projects a total of 240.5 full-time equivalent employees (FTEs), including 9.5 term FTEs associated with the construction and move into the new Collections Conservation Centre and two others associated with digital initiatives and program delivery. These positions will be phased out as the projects are completed over 2019 to 2021. Most employees are unionized.⁴ Ingenium also offers mutually valuable internships, co-ops, and research fellowships to college and university students. These opportunities also help with recruitment. The Corporation monitors the retirement eligibility for staff in critical positions and provides training and learning opportunities according to the succession plan. A strong volunteer base also supports the Corporation's activities: an average of 340 volunteers contribute 22,500 hours of time each year, including the Bytown Railway Society, which cares for the Corporation's locomotives.

While the Corporation's base funding remains steady at about \$27 million annually for the last decade, it has benefited from significant federal investments in infrastructure, including funds to rebuild the CSTM, to address health and safety recapitalization required across its sites, and to build the C3. These capital investments are helping to resolve long-standing issues with the state of its facilities and enabling the Corporation to showcase more artifacts in more relevant exhibits and programs.

The Corporation strives to maximize its self-generated revenues. Admission, membership and parking price increases came into effect in 2017-2018 coinciding with the reopening of the CSTM. It aggressively promotes the museums as unique venues for event rentals. It monitors market demand and pricing for its offerings, which includes exploring ways to monetize digital initiatives. The Corporation's financial position has improved since the re-opening of the Canada Science and Technology Museum in 2017, which surpassed attendance and revenue projections in 2017-2018 and 2018-2019.

The Collections Conservation Centre is a purpose-built facility intended to house the national science and technology collection in specialized environments to ensure its long-term preservation. A new research institute and digital innovation lab would complement the Centre's library and archives, conservation labs, and workshops. Access to the collection would be significantly enhanced both physically and virtually. The Centre would reunite the collection with the staff that cares for it, and corporate services, creating synergies that will lead to more efficient practices and processes, and opportunities to create new forms and dissemination of heritage content.

The Corporation's reputation as a trusted source for content will continue to serve to expand its network of collaborators, domestically and internationally, with a focus on cost-sharing, a strategy that has shown success with the international bicycle exhibition co-developed with science museums from Israel, Germany and Italy, as well as with government departments and agencies also engaged in science and technology literacy. Its working relationships with the creative sector, technology firms and academia to develop open platforms, 3D resources, games and augmented reality apps, which have positioned it as a digital leader in the heritage sector, will also be leveraged toward similar initiatives.

⁴ The bargaining unit is part of the Public Service Alliance of Canada. The current collective agreement is in effect until March 31, 2020.

2.2 Key External Environment Factors

Technology: With the rapid pace of technological change and growing experimentation with virtual and augmented reality applications, the Corporation will focus its investments on a limited range of digital technologies it has identified as most impactful for facilitating its strategic objectives.

Economy and tourism: The stable Canadian economy, coupled with average incomes in the National Capital Region higher than the national norm, means that people are more likely to have and spend disposable income on museum experiences. In 2017-2018, the NCR saw a spike in tourism attributable to the Canada 150 celebrations, which was also felt at the Corporation museums. However, in 2019, the tourism level should return to normal, which is an average of about 3 million tourists.

Competition: There is increasing competition in the sponsorship and philanthropic markets, with an average net increase of 360 charities in Canada annually. The Corporation must remain an appealing opportunity for the philanthropic sector. Additionally, the four national museums in the NCR compete for similar audiences.

Audience expectations: To remain relevant to the Canadian public, the Corporation must evolve to meet the needs of changing demographics, cultural differences, and the growing expectation that public institutions like museums contribute to address social issues and respond to community needs. It presents an opportunity for the Corporation to grow national conversations about contemporary science, technology, and innovation topics. The Corporation also has the opportunity to apply the principles of social impact as lenses to make content and experiences more accessible and relevant for more diverse audiences, such as offering school programs adapted for the needs of groups from Autism Spectrum Disorder programs. A recent example is the commitment in the renewed CSTM to accessibility and inclusivity for people with disabilities through measures such as level flooring, a universal washroom, standard accessible design features for exhibitions, and content on adapted technologies that have been developed for and by people with disabilities.

2.3 Compliance, alignment, audits, and reviews

2.3.1 Compliance with Governor in Council and ministerial directives

The Corporation has taken all actions required by Governor in Council and the minister with respect to the directive on travel and hospitality. The Corporation's travel and hospitality policy and processes are aligned with those of the Treasury Board.

The Corporation will strengthen its compliance monitoring and reporting program in 2019-2020 and continue implementing its integrated risk management framework.

2.3.2 Alignment with Government Priorities

The Corporation's plans align with government direction and key priorities, particularly those related to its mandate and the subject matter of the museums: Diverse and Inclusive Canada; Canada in the World; Creative Canada; Environment and Climate Change; Indigenous Peoples; Jobs and Innovation; and Fair and Open Government. The alignment of each of the Corporation's Strategic Objectives is presented in Section 3.

2.3.3 Audits and Reviews

The Office of the Auditor General of Canada (OAG) conducts an annual attestation audit, as well as a special examination at least once every 10 years, pursuant to the *Financial Administration Act*.

The OAG completed a special examination of the Corporation from November 2017 to April 2018, which became public on March 18, 2019 and is [available online](#). The OAG examined the Corporation's systems and practices with regard to governance; strategic and operational planning; risk management; collection management, and exhibition and program management.

The OAG made nine recommendations for improvement with respect to collections management, policies and processes for developing exhibitions and public programs, legislative compliance and risk management, which the Corporation has accepted and has started to address. A formal action plan will be completed by September 2019. Many of the collection management issues – the focus of many recommendations – would largely be addressed by fully moving the collection into the C3. Based on a thorough risk assessment exercise, the Corporation has implemented numerous measures to ensure collection care, safety and security during the move.

Recent industry-wide reviews and audits include:

- Report of the Standing Committee on Canadian Heritage – [“Moving Forward – Towards a Stronger Canadian Museum Sector”](#) (September 2018)
- Canadian Association of Science Centres – [Benchmark Report 2015-16](#) (2016)
- Environics Research for the Canada Council for the Arts – [“Arts and Heritage Access and Availability Survey”](#) (2016-2017).
- Leger for the Ontario Science Centre – [“Canadian Science Attitudes Research”](#) (July 6, 2018)

3.0 OBJECTIVES, ACTIVITIES, RISKS, EXPECTED RESULTS, AND PERFORMANCE INDICATORS

Planning Framework

Over 2019-2020, Ingenium will pursue year five of its five-year strategic framework for 2015-2016 to 2019-2020. Five strategic objectives guide the Corporation's resource allocation in order to achieve program outcomes in pursuit of its mandate. Each strategic objective has an outcome statement and related result indicators. The result indicators will enable the Corporation to assess the degree to which its activities allow its content to reach, connect and engage citizens at home and abroad, thereby demonstrating progress towards achieving its outcomes.

<i>Strategic Objective (SO)</i>	<i>Outcomes</i>
SO1: Best in Class - Collection	The Corporation has a well-researched, preserved, comprehensive and rationalized collection that is accessible virtually and physically to all Canadians.
SO2: Best in Class – Education and Exhibitions	The Corporation delivered programs, products and services that tell the stories of Canadian ingenuity and innovation.
SO3: National and Global Reach	The Corporation developed and created products that reached, connected and engaged with new and existing audiences outside the museums
SO4: Sustainable and Profitable	The Corporation is a profitable, innovative, well organized, and financially viable organization.
SO5: Renewed and Innovative Infrastructure	The Corporation's three museum campuses are recognized by Canadians and international audiences as destinations of choice in the Canada's Capital Region.

Ingenium will also focus on three key priorities across its strategic framework: Digital Citizenship; Innovation and Growth; Branding and Global Reach. As a trusted source of knowledge content, the Corporation continues to attract collaborators from a range of institutions, not-for-profit and private sector organisations. The Corporation will continue to push the boundaries of what a public institution, like a museum, can do to engage citizens in participatory heritage through new exhibits, public programs, open platforms, virtual and digital experiences, which are made possible, in part, thanks to collaborations.

The Corporation has identified strategies and activities for each strategic objective in order to achieve outcomes. Most of the plans for 2019-2020 continue from previous years and will be completed. These are summarized below.

In 2019-2020, the Corporation will adopt a new strategic framework that will guide its next five-year planning cycle from 2020 to 2025.

3.1 Best in Class — Collection

To consider the national science and technology collection as "Best in Class," the Corporation has defined the outcome as a collection that is renowned as well-researched, preserved, comprehensive, rationalized and accessible virtually and physically to Canadians. Each artifact or archival material contributes to stories about how yesterday's experiment, innovation or invention shapes our present, incites interest and advancements in science and technology.

The following are the main activities and strategies for the strategic objective tied to its collection:

Major Activity	Implementation Milestones	Indicators of Success
<p>Research strategy: foster a strengthened research culture based on interdisciplinary approaches to the study of emerging trends in heritage preservation and interpretation. Themes include: social and cultural dimensions to science and technology; contemporary science and technology; resources and environment; living systems; mobility; conservation of collection; and understanding audiences.</p>	<p>Open the Research Institute in the C3 to researchers and collaborators (2019-2020)</p> <p>Advance curatorial research internally, and collaborate with external researchers, to develop under-represented areas of the collection (ongoing)</p> <p>Coordinate between research activities, the science communication program, exhibition plans, and public and educational programming – and collaborate with national and international program partners – to produce creative, rigorous, and engaging public offerings (ongoing)</p> <p>Undertake a review and renewal of research fellows program (2019-2020)</p> <p>Host/participate in conferences and symposia (ongoing)</p> <p>Evaluate Research strategy (2021-2022) and implement modifications (if required)</p>	<p>The Research Institute will further the Corporation’s research themes by welcoming research fellows, visiting scholars and guest researchers, domestic and international, to conduct and collaborate on relevant research.</p> <p>The availability of research linked to the priority themes identified in the Corporation research strategy, will increase and contribute to the development of the national collection.</p> <p>The Research Institute will increase the capacity of Ingenium staff to host and participate in conferences and symposia that further knowledge about the collection and museology.</p>
<p>Indigenous engagement: strengthen the Corporation’s relationship with Indigenous communities by collaborating on research, conferences, and exhibitions to showcase Indigenous ways of knowing. The development of a formal framework will be informed by these experiences and more consultations required.</p>	<p>Pursue an Indigenous astronomy research partnership, including an international Indigenous astronomy conference in 2020 and travelling exhibition (<i>funding dependent</i>) (2019-2020 to 2020-2021)</p> <p>Work with Kitigan Zibi Anishnabeg and Algonquins of Pikwakanagan First Nation to co-curate an update to Brand Canada artifact case and explore other opportunities (2019-2020).</p> <p>Develop and implement an Indigenous engagement framework (2019-2020 to 2022-2023)</p> <p>Multi-year Indigenous foodways research project at CAFM (2018-2019 to 2022-2023) <i>with an Indigenous foodways exhibition at CAFM (funding-dependent, 2023-2024)</i></p>	<p>The Corporation will fulfill its duty to consult Indigenous communities and better showcase Indigenous science, technology, and innovations.</p> <p>Indigenous communities will engage with CAFM in a conversation on foodways.</p> <p>Co-curated content will be developed for sharing at the Indigenous astronomy conference in spring 2020.</p> <p>Secure funding for, and develop, a co-curated travelling exhibition on indigenous astronomy in Fall 2020 (funding-dependent)</p>
<p>Collection Rationalization Project: ensure the historical development and appropriate care of the national science and technology collection</p>	<p>Pursue accelerated collection rationalization in the context of the collection move into the C3 (2018-2019 to 2020-2021).</p>	<p>In order to maintain a relevant and representative collection, the Corporation will remove collection objects and associated inventory that do not contribute to the enhancement of the collection.</p> <p>Resources will be focused on the preparations to ensure a safe and efficient collection move to the C3.</p>

Collection Digitization and Digital Access	Digitization of collection through digital records available online (ongoing) Add content to the Digital Archives portal (ongoing)	Remote access to, use of, and experiences with the collection through digital tools and platforms will increase.
Digital Innovation Lab in the C3: The lab will be a dedicated space for digital innovation with the Corporation's collection, building on success it has had experimenting with a myriad of digital technologies in collaboration with others to deliver new forms of heritage content.	<i>Base fit-up of the lab (funding-dependent) (2019-2020)</i> Pilot projects and experiments and continue consultations on strategy for the lab (e.g. 3D modeling, virtual and augmented reality) (2020-2021) <i>Fit-up lab with speciality equipment and refine and roll-out strategy to stakeholders (funding-dependent) (2020-2021)</i>	The Ingenium Digital Innovation Lab will facilitate the exploration of applications of new and emerging technologies to cultural heritage, in order to make the collection more accessible, generate new forms of knowledge, and disseminate this knowledge through the innovative use of digital media. The network of culture and technology collaborators in Ingenium's content offerings will expand to increase the diversity and number of offerings.
Collection development, conservation, and secure access	Review and implement requirements for establishing, maintaining, and developing the Collection (2019-2020 to 2020-2021) Develop collection access procedures for C3 (2019-2020)	The Corporation's processes will be strengthened to ensure compliance with corporate policies and procedures. Procedures for access to the collection will ensure its security.
Collection Tours and Displays in the Collection Conservation Centre (C3)	Identify the placement of artifacts (by size, type, and collection area) to facilitate viewing and tours in the C3 (2019-2020) Develop and pilot collection tours for the C3 (2019-2020 to 2020-2021) Launch collection tours (2021-2022) First group of artifacts installed in the interior atrium display cases (2019-2020)	Tours and the increased number of collection objects on display will increase public viewing and knowledge of the collection. C3 tours will generate revenue. The Corporation will support the next generation of museum professionals by providing opportunities for fellows, interns and students working with the Corporation to curate content.

Mandate	Results	Government Priorities
Heritage Preservation and Research: Developing and preserving a comprehensive national science	The collection is more accessible digitally and physically.	<i>Fair and Open Government:</i> Giving Canadians enhanced access to Canada's national collection of science- and technology-related artifacts (2D and 3D) both on-site and through digital channels. <i>Jobs and Innovation:</i> Providing access to the collection, and related data and metadata, to support research and digital product development through collaborations with academia, government, and industry.

and technology collection; providing access to the collection; and sharing research and expertise to enhance knowledge of the collection.	By focusing on and sharing expertise, the Corporation becomes a leader in science and technology subject-based research	<p><i>Canada in the World:</i> The Research Strategy will facilitate international research partnerships and support Canadian researchers and other professionals in fields in which Canada is an international leader. Through the participation in international partnerships, the Corporation will present Canada’s cultural sector professionals on the world stage.</p> <p><i>Jobs and Innovation:</i> The Digital Innovation Lab will advance understanding and applications of Canadian innovations collaboratively (with academia, government, industry, and cultural institutions).</p>
	The Collection Rationalization Project is advanced	<p><i>Government Services and Operations:</i> The collection rationalization project is meant to ensure the Corporation’s resources are used effectively and efficiently to care for the best representation of the collection, and to increase public access to it.</p>

Results indicators	Baseline (2015-2016 target)	2019-2020 Target
Percentage of the 3D collection digitized (meaning that a digital record has been created)	94%	96%
Amount of space cleared in collection storage	450 m ²	500 m ²

3.2 Best in Class — Education and Exhibitions

To consider itself to be the “Best in Class” for education and exhibitions, the Corporation will continue to create informative, engaging, relevant and compelling physical and digital exhibitions and learning opportunities that encourage visitors to explore the products and processes derived from the diverse social, economic and cultural relationships between science, technology and modern life.

Major Activity	Implementation Milestones	Indicators of Success
Collaborations with academic, industry, and government to showcase innovations at the museums	<p>CAFM: develop demonstrations and educational programs related to <i>Secret Life of Soil</i> exhibitions (projected opening 2020), focusing on contemporary scientific research, technological advancements and precision agriculture practices pertaining to soil management and conservation in agriculture. (2019-2020)</p> <p>CASM: Work with Aero/Space Network and school boards to host an Aerospace Career Fair (2019)</p> <p>Collaborate with Algonquin College for a museum-based virtual reality laboratory (ongoing)</p> <p>CTSM: Provide youth programming related to David St-Jacques’ mission with Canadian Space Agency, Royal Canadian Geographical Society and Western University (2019-2020)</p>	<p>CAFM will further Canadians’ knowledge of soil science by establishing and working with a National Soil Advisory Council to assist with the development of the long-term exhibition, travelling display and educational programming. This council will be comprised of industry, academia, government and non-government organizations.</p> <p>CASM visitors will gain a better understanding of new technologies contributing to the expansion of Canada’s aerospace sector.</p> <p>CASM will position itself as a national communication platform for the aerospace industry.</p>

	Develop programming on ocean pollution with Fisheries and Oceans Canada (2019-2020)	CSTM will position itself as a facilitator and partner for STEAM across Canada.
STEM/STEAM educational programming – including curriculum-connected content for educators – and collaborative initiatives – including STEAM Horizon Awards (which recognize five young people, including at least two Indigenous students, for their achievements in the fields of science, technology, engineering, arts, and math (STEAM) with a financial prize for their post-secondary education in a STEAM field.	<p>CAFM: Programming on the use of satellite technology and the STEM behind soil management in agriculture (2019-2020)</p> <p>Planning for five-year thematic program on food security (2019-2020)</p> <p>Deliver the subsidized AgVentures outreach educational programs in STEM across Eastern Ontario and Western Quebec (2018-2019)</p> <p>CASM: Space-themed programming aligned to temporary exhibitions (2019-2020)</p> <p>Delivery of programming for 2019 People and Professions theme (to 2019-2020)</p> <p>CSTM: DaVinci themed programming to align with temporary exhibition</p> <p>Expand Exploratek programming to include art within STEAM (2019-2020)</p> <p>Continue to build on success of first STEAM Effect cohort and diversify recruitment for future participants (ongoing)</p> <p>Ingenium: Host the STEAM Horizon Awards (ongoing annually)</p>	<p>CAFM will reach a greater number of students, including those in underserved communities, with STEM content by working with local and national partners to offer a broad spectrum of learning opportunities.</p> <p>CASM will better serve its varied audiences and meet STEM curriculum targets by offering a diversified portfolio of programs, demonstrations and special activities.</p> <p>CASM will produce more relevant programming by increasing its partnership opportunities with stakeholders and community members to emphasize a collaborative approach.</p> <p>CSTM will increase access to science literacy for youth who have difficulty seeing themselves in STEAM-related careers.</p> <p>Ingenium: The STEAM Horizon Awards winners will be ambassadors for the Corporation and its subject areas</p> <p>Awareness and participation of youth in STEAM-related studies will increase</p>
Virtual and digital educational programs	<p>Develop virtual and educational programs aligned to cyclical changes of exhibitions and programs (ongoing)</p> <p>CAFM: Review content of online educational activity kits to ensure they meet the current inquiry-based learning models in provinces and territories (2019-2020)</p>	The Corporation’s online educational resources will be developed with national partners, will support national curriculum links to STEM, and will be trusted and popular among educators.
Exhibition space renewals at the museums: All three museums continue to pursue renewal of their exhibition spaces with the help of contributions, sponsorships and collaborations from the	<p>CAFM: Develop concepts for exhibitions, displays and programs with a “food security” lens (environment/climate change, precision ag/clean tech, nutrition/health, biodiversity and genetics) (2019-2020)</p> <p>Launch thematic artifact spotlights in the Learning Centre and Exhibition Gallery (2019-2020)</p> <p><i>Develop exhibitions with public consultations (funding-dependent):</i> Soil</p>	<p>All three museums: Visitor satisfaction level is maintained.</p> <p>Rotation of long-term exhibitions and special exhibitions will provide renewed experiences for visitors that keep pace with contemporary innovations and social themes and maintain visitor interest and attendance at the museums.</p> <p>The number of visitors made aware of the following topics will increase:</p> <ul style="list-style-type: none"> • Food security

<p>public and private sector as the Corporation has limited resources to do so independently beyond minor remedial works. Host special exhibitions at CASM and CSTM</p>	<p>Science (2020-2021); Aquaculture (2022-2023); and Nutraceuticals (2024-2025)</p> <p>CASM: Ongoing fundraising for the renewal of Cold War island (2018-2020)</p> <p>Launch and host new Health in Space exhibition, supported by Canadian Space Agency funding (2019-2021)</p> <p>Develop new exhibition on air traffic control, supported by NAV Canada funding (2020-2025)</p> <p>Host the <i>Art of the Airport Tower</i> special exhibition (2019)</p> <p>CSTM: Complete remedial work on exhibitions resulting from post-reopening evaluations (2019-2020 to 2020-2021)</p> <p>Host <i>Da Vinci</i> special exhibition (2019) and <i>Bicycles</i> (2021)</p> <p><i>Develop an exhibition on the theme of failure as a necessary element to innovation and creativity, if partnerships secured (2019-2020 to 2020-2021)</i></p>	<ul style="list-style-type: none"> • Canada’s contributions and involvement in aerospace innovation during the Cold War era; • Canada’s role in Space-related health sciences • David St-Jacques and his mission to the ISS • Air traffic control importance in modern day air travel • Curiosity and perseverance in science and technology innovation <p>Remedial work on exhibition will increase accessibility and visitor satisfaction, especially as it relates to better sound and lighting conditions.</p>
<p>Exhibition and Public Program Management</p>	<p>Finalize corporate-wide exhibition development process with the help of a specialized firm and internal consultation (2019-2020)</p> <p>Implement corporate wide-exhibition development process (2020-2021)</p> <p>Complete policy and guidelines work for exhibitions (2019-2020) and public programs (2020-2021)</p> <p>Implement a compliance monitoring program to ensure that key requirements are being followed (2021-2022)</p>	<p>Decision-making regarding Ingenium exhibitions and public programs will be consistent and better informed through the standardization of the development process and documentation.</p>
<p>Science Communications</p>	<p>Build multi-year plan for science communications dissemination and training (2019-2020).</p> <p>Develop a suite of programs and products associated with Open Science for partnership opportunities (ongoing)</p>	<p>The capacity of government in science communications will be increased through training and access provided by Ingenium and through Open Science channel.</p>

Mandate	Results	Government Priorities
<p>Exhibits, programs, and outreach</p>	<p>Unique exhibitions that are relevant, engaging and entertaining</p>	<p><i>Government Services and Operations:</i> Creating relevant, engaging, and entertaining experiences on topics related to our mandate – including the celebration of Canadian science and technology innovations – is</p>

Interpretation of the collection and demonstration of scientific and technological innovations and inventions, and their impact on society, through the delivery of virtual and physical exhibits and educational programs for museum visitors and global audiences.	experiences are created	crucial to our mandate. We remain committed to engaging Canadians by evolving and evaluating our services and operations.
	Significant and inspiring Canadian science and technology innovations are celebrated	<i>Diverse and Inclusive Canada:</i> Engaging with traditionally under-represented groups and integrating their histories and objects presents a more inclusive and more complete interpretation of Canadian innovation. This inclusive approach also provides more relevant and welcoming content and experiences so that more under-represented individuals will engage with the Corporation and its initiatives.
	STEAM educational programming in formal and informal forums are offered	<i>Jobs and Innovation:</i> STEAM skills are crucial for young Canadians to be successful in their careers and for Canada to compete internationally. By building these skills and inspiring lifelong learning and curiosity through programming, the Corporation is contributing to the future success of Canada’s children and youth.

<i>Results indicators</i>	<i>Baseline (2015-2016 target)</i>	<i>2019-2020 Target</i>
Attendance at CAFM, CASM and CSTM	CAFM: 180,000 CASM: 200,000 CSTM: closed TOTAL: 380,000	CAFM: 211,000 CASM: 233,000 CSTM: 449,000 TOTAL: 893,000
Number of downloads of educational materials	87,587 (baseline year)	90,000
Percentage of visitor satisfaction	90%	90%
Number of school programs / number of participants	1,526 programs / 44,812 participants (baseline year)	1,700 programs / 49,000 participants

3.3 National and Global Reach

The Corporation recognizes that many Canadians do not have the opportunity to visit the museums to experience live, hands-on learning about the science and technology innovators and inventions. Moreover, physical exhibition offerings are limited by museum floor space. That is why it has developed so many different approaches, both physical and digital, for promoting science and technology literacy outside of the museums’ walls, into communities across Canada.

<i>Major Activity</i>	<i>Implementation Milestones</i>	<i>Indicators of Success</i>
Outreach networks	Host the ARTEFACT international conference (2021) Host the Canadian Association of Science Centres national conference (2020) Sustain, establish and develop new relationships with international organizations, aligned with the global outreach strategy (ongoing)	Relationships fostered will help showcase Canadian innovations in science and technology, improve cross-cultural understandings, and facilitate dialogue and exchange. The Corporation will be recognized as a significant contributor in Canada’s cultural trade sector

	Continue to grow the national scale Aero/Space Knowledge and Skills network (ongoing)	The Aero/Space Knowledge and Skills network will facilitate collaborations among academia, industry and government participants, and will connect people to Canadian companies and technological research and innovations.
Travelling Exhibitions Program	Continue pilot testing 2-D (downloadable digital files) travelling exhibition products (2019-2020) Tour: <ul style="list-style-type: none"> • Health in Space (May 2019-2026) • <i>Display on soil science and soil management (funding-dependent) (beginning in 2019-2020)</i> • <i>Fail (funding-dependent) (beginning 2020-2021)</i> Continue working with a third-party consultant on Indigenous Skies travelling exhibition (2022)	The Corporation will create and tour travelling exhibitions to disseminate and facilitate access to its exhibition content across the country, continent, and globally. The creation of travelling exhibitions will involve cost-effective strategies, such as collaborations and sponsorships, to support the sustainability of the program. Travelling exhibitions will be hosted by new venues and visit new communities to provide a greater number of citizens the opportunity to learn about Canadian innovations in science and technology.
Digital outreach	Develop a content strategy for games and interactive media (2019-2020) Launch a new mobile game for the Nintendo Switch platform (2019-2020) Pursue implementation of the Ingenium channel content strategy incorporating external content, internal content, and brand-building (ongoing).	The Corporation will continue to innovate and use digital technologies strategically to increase the national and international reach of its content. Revenues will be generated through select digital outreach products (e.g. mobile apps), which will be re-invested in digital initiatives toward further expanding its reach.
Documentaries and videos	Produce up to 12 documentaries or video content (2017-2018 to 2020-2021) The CSTM documentary will launch on Radio-Canada Explora (2019)	Through documentaries and video content, Ingenium will increase its national and international audience reach.
Ingenium Branding	Continue to promote brand through all communication activities (2019-2020) Evaluate impact of new branding (2021-2022)	Ingenium will be a recognized brand nationally and internationally demonstrated by new partnership and collaboration opportunities that increase its reach and relevance.
Let's Talk Energy national energy literacy program	Launch of new strategic plan for shift from energy specifically to a broader look at sustainability and clean technology (April 2019) Deliver programming and events surrounding Talk Energy Week (annual, ongoing)	Canadians will have opportunities to learn about sustainability and clean technology through the programming and events delivered by the program. Let's Talk Energy will remain sustainable as a fully funded initiative by continuing to leverage projects and partnerships.
Women in STEM initiative: Guided by a national advisory council, the program raises	Launch communications campaign (2019-2020) Website content renewal, posters and stories added (ongoing)	The Corporation will contribute to and facilitate a national dialogue on the presence of Women in STEM that encourages more women to study in STEM fields.

awareness about the challenges faced by women in STEM and examples of success of women in these fields.	Develop national travelling display (2019-2020) Launch Women in STEM webisodes in partnership with other Canadian institutions (2019)	
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<i>Mandate</i>	<i>Results</i>	<i>Government Priorities</i>
Exhibits, programs, and outreach Interpretation of the collection and demonstration of scientific and technological innovations and inventions, and their impact on society, through the delivery of virtual and physical exhibits and educational programs for museum visitors and global audiences.	A creative and relevant line of outreach products is built.	<i>Government Services and Operations:</i> Our commitment to creativity and relevancy is to ensure that our outreach products remain engaging and meaningful for target audiences. <i>Canada in the World:</i> Our outreach products include travelling exhibitions and digital products which share Canada’s innovation story and Canadian perspectives internationally.
	Strong regional, national and international networks are built and sustained	<i>Jobs and Innovation:</i> The Corporation supports these networks, especially in communicating and interpreting highly technical subject-matter in a meaningful way for the public. This increase in public knowledge can help growth in these fields in various ways, such as increased talent pool due to increased enrollment in relevant academic disciplines. <i>Canada in the World:</i> The Corporation’s participation in international networks increases Canada’s profile and respect for Canadian expertise and perspectives in the international landscape.
	Awareness is increased with new marketing and branding strategies.	<i>Government Services and Operations:</i> Increasing awareness of the Corporation’s exhibitions and programming encourages Canadians to engage with them, which increases the reach and impact of these government operations. <i>Canada in the World:</i> The Corporation’s marketing and branding strategies include international products and the Corporation’s presence at international events such as conferences. In many cases, the Corporation is representing Canada on the world’s stage.

<i>Results indicators</i>	<i>Baseline (2015-2016 target)</i>	<i>2019-2020 Target</i>
Number of virtual reach, connections and engagements*	16 million	26.2 million
Attendance for travelling products and national programs	3.8 million	3.97 million
Number of Edukit rentals / number of youth engaged	28 rentals / 1,286 youths (baseline year)	10 rentals / 500 youth

**Virtual reach is tabulated based on the number of impressions on Twitter and Facebook, Flickr and website views. Virtual connections is the increase number of followers on social media. Virtual engagements is the number of re-tweets, comments, shares, YouTube views of Ingenium content on social media.*

3.4 Sustainable and Profitable

Being sustainable and profitable for the Corporation means ensuring that the financial and human resources and facilities are in place to achieve successful program outcomes. Decisions with respect to revenue-generating opportunities, such as special exhibitions and new programs, are founded on business cases that demonstrate value-for-money. The museums continue to make adjustments to their educational and public programs to ensure they meet the needs of their clientele.

<i>Major Activity</i>	<i>Implementation Milestones</i>	<i>Indicators of Success</i>
Business Plans	Develop tri-annual business plan by museum and review annually, and update HR plans accordingly (ongoing)	Successfully delivered results against corporate outcomes, enabled by aligned business plans and human resources plans.
Facility rentals and tours	Incorporate C3 facilities in facility rentals strategy (2019-2020) Implement pricing for C3 tours (2020-2021) Expand rentals business lines and customer base and more customer-focused food services (2021-2022)	Revenues will increase through: Increased Facility rental users' and food customers' satisfaction and retention. The profitability of facility rentals and a profit-sharing arrangement with the in-house provider and preferred caterers.
Sponsorships and donations	Secure sponsorships for programming and exhibition initiatives at the museums, as well as initiatives being developed with the C3, and national programs (ongoing)	Sponsorship and philanthropic support will increase Ingenium's capacity to provide a diverse range of offerings and engagement opportunities aligned with its objectives.
Diverse and healthy workforce	Consult with representatives of diverse communities and identify and remove any barriers to hiring, training or promotion (2019-2020 to 2021-2022) Support employee development to meet succession and business plans (ongoing) Promote mental health awareness (ongoing)	Representation in the Corporation's workforce will be sustainably increased to better reflect the local community. These measures will include the front-line staff being representative of visitors (local demographics). Employees will be satisfied with their employment, as measured through outcomes in employee surveys (informal and formal).
Strategic planning, operational planning, and performance measurement	Strengthen operational planning with respect to the resources required and expected results (2019-2020) Develop a new Strategic Plan for 2020-2025 including performance indicators that measure progress on strategic outcomes (2019-2020)	The Corporation will fulfill its vision, mission, and mandate through the development and delivery of a Strategic Plan (supported by performance measures for measuring progress towards achieving outcomes) and work plans aligned to the Strategic Plan and operational needs.
Risk management	Implement Integrated Risk Management Framework and use Corporate Risk Profile to monitor and report on key corporate risks (2019-2020 and ongoing)	Major corporate risks will be proactively managed so that they do not impede the Corporation's progress against its strategic outcomes.

<i>Mandate</i>	<i>Results</i>	<i>Government Priorities</i>
Internal Services Stewardship and management of corporate infrastructure, resources and services.	A sound business model that diversifies and maximizes commercial returns is implemented	<i>Government Services and Operations:</i> Increasing commercial returns through effective planning and implementation of business practices.
	The Corporation’s digital (creative) infrastructure is strengthened.	<i>Sustainable Infrastructure:</i> With a lower cost-per-impact than traditional outreach products (e.g. travelling exhibitions), digital infrastructure allows the Corporation to complement traditional products with digital products (e.g. mobile apps, video content, etc.) that increase content reach and diversity. <i>Government Services and Operations:</i> Digital infrastructure – such as the Ingenium Channel, digital asset management tool, and Open Documents portal – enables the Corporation to reach a wider audience more effectively.
	Our workforce and workplace are strengthened.	<i>Strong Middle Class:</i> The majority of Ingenium positions are middle class jobs. The Corporation remains committed to employment equity and employee well-being. <i>Jobs and Innovation:</i> The Digital Lab and the Research Institute as part of the C3 will facilitate Canadian R&D through collaborative partnerships to support Canada’s science, technology, and innovation ecosystem.

<i>Results indicators</i>	<i>Baseline (2015-2016 target)</i>	<i>2019-2020 Target</i>
Amount of operating revenue generated	\$3.12 million (CSTM was closed)	\$9.07 million
Amount of contributions from donations, sponsorships and in-kind	\$1.6 million	\$1.6 million
Number of collaborative agreements	30 (new for 2018-19)	3 new agreements for a total of 36
Number of training hours for staff	2,054 (baseline year)	2,000

3.5 Renewed and Innovative Physical Infrastructure

Accommodations include all activities which involve the physical environments that are required to house, protect and display the collection; the public facilities where hundreds of thousands of on-site visitors are welcomed each year; and office and administration space for staff (see section 4.4, Capital budget discussion for more details on the projects below).

<i>Major Activity</i>	<i>Implementation Milestones</i>	<i>Indicators of Success</i>
Collections Conservation Centre (C3) In budget 2016, the Corporation received funding for the construction of, and move to, a new Collections Conservation Centre to	Move collection and staff into the C3 (2019-2020 to 2020-2021) Install shelving and racking for collection storage (2018-2019 to 2019-2020) Vacate leased facilities (2019 to mid-2021)	The C3 will preserve and protect the collection in proper environments. Its space will facilitate the implementation of the Corporation’s Research Strategy, digital strategy, and branding.

preserve and protect priceless Canadian heritage artifacts.		It will be a beacon for the Corporation and collaborators to innovate and promote the collection.
CSTM site renewal: Pursue the CSTM master site plan including the development of a new museum park, landscaping and hardscaping, new vehicular circulation and parking relocation.	Evaluations and remedial work in terms of the exhibition spaces and the physical building (ongoing) Work with Ingenium Foundation ⁵ to secure funds for completion of site works and park development: Undertake philanthropic feasibility study (2018-2019 to 2019-2020) Develop business case (2019-2020) Develop (2019-2020) and implement fundraising strategy (2019-2020 until funds are secured)	Remedial and accessibility initiatives will render the Museum more accessible to visitors with varying abilities. The realization of the Master site plan will enrich the museum experience, provide more park space in an underserved community, and increase visitors to the site.
Restoration and conservation hangar at the CASM	Identify sources of funding for the hangar (2019-2020) Build and open the hangar should funding be secured (2020-2021 to 2022-2023)	The restoration and conservation hangar will increase capacity for the Corporation's restoration and conservation work and safeguard the aviation collection for future generations. It will also serve as a center for national public outreach programs that will inspire the next generation of pilots, astronauts, engineers, maintenance technicians, etc.
Food Innovation Centre* (FIC) at the CAFM <i>*Working title</i>	Complete the feasibility study for the capital campaign (2019-2020) Build and open FIC should funding be secured (2020-2021 to 2022-2023)	The FIC will serve as an inspiring backdrop for national discussions on food literacy, food security and food policy, while providing amenities for visitors and revenue-generating facility rentals and retail space.
Health and safety projects identified for Budget 2016 funding	Complete the projects identified for funding each year (to 2020-21).	The Corporation sites will be safer and more secure for the collection, farm animals, and the visitors, volunteers, and staff.

⁵ The legal name of this charity is the Canada Science and Technology Museum Corporation Foundation; the operational name has been changed to the Ingenium Foundation to reflect the new operational name of the Corporation. The Ingenium Foundation, overseen by a Board of directors, undertakes a range of philanthropic initiatives. Directors are recruited and elected by members of the Board. The Foundation's directors are volunteers and are not remunerated for their participation, nor are their expenses related to Board activities reimbursed, as per the foundation's by-laws.

<i>Mandate</i>	<i>Results</i>	<i>Government Priorities</i>
Museum and Collection Buildings Managing the physical environments that house collection objects and exhibits stored and on display at the Canada Agriculture and Food Museum, the Canada Aviation and Space Museum, and the Canada Science and Technology Museum as well as laboratory, workshop and administrative spaces.	The need for a conservation and restoration hangar for the aviation collection is addressed.	<i>Sustainable Infrastructure:</i> The conservation and restoration hangar for the aviation collection will enable improved care of the CASM collection and affirm the role of the museum as a hub in the aviation and aerospace ecosystem. The FIC will address CAFM’s need for additional program space, and provide a proper welcoming center with visitor amenities and services. It will allow it to expand its exhibits and programs offering and generate increased revenues that are re-invested in CAFM activities. The Collections Conservation Centre (C3) represents the first time that the Corporation will have a purpose-built facility to conserve, preserve, and store the science and technology collection, and space for centralized administrative offices. This will address the Corporation’s current dependency on leased facilities with increasing rent payments, and will improve ease and quality of operations for the long term.
	The feasibility study is completed and the business case developed for the Capital campaign for Food Innovation Centre (FIC) at the CAFM.	
	The Collections Conservation Centre is designed and built.	<i>Canada in the World:</i> These three facilities, especially the C3, will increase possibilities for international collaborations and partnerships with researchers and institutions, which will increase Canada’s profile in the international science, technology, and innovation ecosystem.
	Health and safety projects funded from Budget 2016 are implemented.	<i>Safety and Security:</i> The completion of these health and safety projects will result in the Corporation’s sites being safer and more secure for visitors, volunteers, and staff, as well as the collection and the farm animals.

<i>Results indicators</i>	<i>Baseline (2015-2016 target)</i>	<i>2019-2020 Target</i>
Meet project milestones for the CSTM infrastructure modernization	Meet completion milestones	Not applicable (CSTM completed in 2017)
Develop business case and fundraising strategy for CSTM park	New project as of 2018-2019	Planning continued
Successfully launch the capital campaign for the Food Innovation Centre at CAFM	Campaign launched by 2020	Planning continued
Identify funding for an aviation conservation and restoration hangar at CASM	Develop funding strategy by 2020	Business case reviewed
Meet project milestones for the Collections Conservation Centre	Meet milestones for completion by 2018 (New as of 2016-2017)	Building completed in 2019
Health and Safety projects funded through Budget 2016 are completed on time and within budget	Complete projects by 2021 (New as of 2016-2017)	Identified projects are completed

3.6 Corporate Risks

In 2017, the Corporation standardized and enhanced its risk management practices through the development of an Integrated Risk Management Framework (IRMF). The IRMF is consistent with applicable standards and follows the International Standards Organization (ISO) 31000 – Risk Management.

The three following key corporate-level risks facing the Corporation's ability to achieve its strategic objectives were identified as the most prominent in terms of impact and/or likelihood.

Risk 1: The impact of cost overruns on the Collections Conservation Centre and the inability to successfully complete the project with proper building and site functionality.

Mitigation strategies:

- Highly-qualified team of professionals delivering the Collections Conservation Centre, including a specialized project manager to ensure rigorous adherence to schedule and budget
- Additional oversight from the Board of Trustees' Major Facilities Committee
- Overall budget contingency of 15% used or allocated to tender packages
- Regular re-evaluation of value engineering opportunities throughout the construction project
- Absorb unavoidable critical costs of \$2.5 million in 2019-2020 and delaying decisions on other cost pressures until funds are identified
- Retain the largest of the leased buildings to house the portion of the collection that cannot move into the C3, if required

Risk 2: The potential loss of relevance due to its limited capacity to invest in new programming and exhibitions on multiple platforms.

Mitigation strategies:

- Communicate the impact of financial pressures on ability to deliver mandate (program activities to preserve and protect collection) on an ongoing basis
- Find efficiencies and savings, revenue generating opportunities, contributions, sponsorships, and resource-sharing collaborations with other institutions on an ongoing basis
- Build the C3 to reduce reliance on leased space
- Present content through digital products and lower-cost programming (e.g. lectures) on an ongoing basis
- Limit new program and exhibition activities to those that are cost-shared or that show solid evidence for return-on-investment on an ongoing basis

Risk 3: Endangering the national collection in storage due to inappropriate storage conditions or during the move to the Collections Conservation Centre.

Mitigation strategies:

- Make repairs to leased buildings in the short-term to protect artifacts and address staff health and safety issues
- Monitor building systems on an ongoing basis with funding from Budget 2016.
- Continue collection rationalization and dispose of surplus inventory
- Design the C3 in a manner that facilitates future expansion for long-term collection growth
- Implement collection risk mitigation strategies to manage hazards, based on a detailed risk register and action plan.
- Strengthen health and safety program for employees
- Engage specialized firms for the move of oversized, extra-large artifacts in 2019

4.0 FINANCIAL DISCUSSION

4.1 Financial Overview

4.1.1 Major assumptions with respect to funding and revenues

The Corporation assumes that it will receive a stable level of government funding over 2019-2020 to 2023-2024, at a base level of appropriations of \$27.3 million annually. It also assumes that it will receive the remaining temporary capital funds of \$6.775 million approved in federal budget 2016 to complete health and safety-related infrastructure recapitalization projects through 2020-2021.

While about 73% of the Corporation's operating budget is funded through parliamentary-voted appropriations, another 22% is generated through operational revenues, and just under 5% is contributed income. The Corporation's ability to generate revenues and contributions is essential to the successful delivery of the corporate plan activities.

The largest portion of operating revenues is generated by charging fees on museum activities and services, including admissions and educational programs, boutique sales, thematic experiences, parking, facility rentals and concessions. As such, operating revenues are highly correlated to the visitor attendance at the museums.

Attendance includes paying visitors, through gate admission, memberships, programs and events, as well as those who visit using free passes, during free admission periods, or site users when there is no fee. The following table provides a breakdown of attendance by museum.

Table 1 – Visitor Attendance

	2017-2018 <i>Actual</i>	2018-2019 <i>Target</i>	2019-2020 <i>Projection</i>
Canada Science and Technology Museum	278,000	520,000	449,000
Canada Aviation and Space Museum	279,000	245,000	233,000
Canada Agriculture and Food Museum	218,000	172,000	211,000
Total	775,000	937,000	893,000

For the first time in its history, the Corporation will have welcomed over 1 million visitors in a 12 month period (from November 2017 to November 2018). This was an exceptional year due to the renewed CSTM drawing nearly 700,000 visitors through re-opening events, admissions, special exhibitions and programs in its first 12 months of re-opening. Starting in 2019-2020, the Corporation expects that the renewed CSTM will be able to sustain an ongoing attendance level one-third higher than the 330,000 visitors it received on average in the years before closure.

With attendance figures expected to balance off to a new baseline as of 2019-2020, revenues are also expected to remain relatively stable over the period.

Coinciding with the re-opening of the renewed CSTM in 2017, the Corporation increased the fees for memberships, admissions and parking. It will review its fee schedules over the period as it continues to monitor the market prices for similar offerings to remain on par with these.

The Corporation continues to seek sponsorships and create long-term resource-sharing collaborations with federal government organisations, heritage and academic institutions, as well as the private sector, to increase and enrich its offerings. The Corporation receives financial and in-kind contributions, including

from the Ingenium Foundation, an arm's-length registered charity, which is dedicated to providing access to Ingenium museums' exhibitions and educational programs, as well as funds to care for the collection. In-kind contributions include support from employees of other government organizations for which the fair market value can be determined. The Corporation's fund-raising capacity faces an increasingly competitive sponsorship and philanthropic sector.

The Corporation has no borrowing authority for funds, and does not have any plans to incur leases that are above the threshold of 1% of the Corporation's total assets or \$100,000.

4.1.2 Major assumptions with respect to expenses

Over the period, the Corporation projects balanced budgets, with the exception of budget year 2019-2020, when the Corporation will post a loss of \$2.624 million in order to access its unrestricted net assets to cover the unavoidable and critical cost overruns to complete the Collections Conservation Centre. This investment will deplete the Corporation's equity, leaving it with no margin to absorb any unforeseen cost increases with respect to its operations or infrastructure, or invest in strategic program initiatives. Rather, it would likely have to substantially reduce its salary envelop and programs in order to balance its budget.

About half of the Corporation's 2019-2020 budget will be spent on salaries for museum staff to welcome visitors, develop and deliver programs and services, and care for its collection and corporate assets (\$20.8 million), and another quarter will be absorbed by mandatory costs associated with safely and securely operating its facilities (\$10.5 million). The Corporation will experience a significant spike in facilities costs while it simultaneously operates the new Collections Conservation Centre and three leased facilities, as it moves.

The capital expenditures will return to a base level of \$0.8 million per year as of 2021-2022, once the Corporation completes the C3 project in 2019 and the health and safety-related infrastructure recapitalization projects through 2021. The temporary capital funding received since 2015 for the CSTM renewal, the C3 construction, and to address health and safety-related projects have led to significant increase in the value of the Corporation's asset portfolio and amortization levels.

Debt: The Corporation is carrying a loan repayment obligation for the \$4.2 million it received from the Management Reserve in 2008 to renovate the CASM with a new entrance lobby, a multi-purpose auditorium, classrooms, cafeteria, expanded boutique, and library and archival storage. According to the terms of the loan, the Corporation is expected to repay it within 25 years, using the net operating income from the expected increase in revenues and fundraising for these new spaces.

Key comparisons: The Corporation's appropriations to revenues ratio is on par with the average of the national museums. Like them, the Corporation seeks to increase its revenues and fund-raising to off-set the growing impact of inflationary costs. This is a more substantial pressure for the Corporation, which operates 19 buildings, while the other national museums are responsible for one to three buildings. Given its limited funding, the Corporation spends less per square meter on building operations, and invests less in recapitalization, than the international benchmark for museum and heritage facilities.

4.2 Financial Statements

The *pro forma* financial statements have been prepared in accordance with Section 4200 series of the Canadian Public Sector Accounting Standards applicable to government-not-for-profit organizations. They are consistent with those reported in the institution's annual report. The Corporation applies the deferral method of accounting for contributions for not-for-profit organizations, hence, the statements

are presented on the accrual basis of accounting. They display revenues by source and expenses by activity, consistent with the Corporation's core responsibilities reported in the *Main Estimates*.

More detailed information about the Corporation's recent program and financial results can be found in the Corporation's annual report: <https://ingeniumcanada.org/corporation/annual-report>.

Table 2 – Statement of Financial Position

<i>(in thousands of \$)</i>	2017- 2018 <i>Actual</i>	2018- 2019 <i>Forecast</i>	2019- 2020 <i>Budget</i>	2020- 2021	2021- 2022	2022- 2023	2023- 2024
	<i>Projections</i>						
ASSETS							
Current assets							
Cash and cash equivalents	\$126,994	\$39,224	\$10,960	\$11,850	\$13,440	\$15,031	\$16,631
Accounts receivable:							
- Government departments	\$3,752	\$1,500	\$1,200	\$900	\$900	\$900	\$900
- Trade	\$574	\$375	\$375	\$375	\$375	\$375	\$375
Inventories	\$403	\$600	\$600	\$600	\$600	\$600	\$600
Prepaid expenses	\$775	\$400	\$400	\$400	\$400	\$400	\$400
	<u>\$132,498</u>	<u>\$42,099</u>	<u>\$13,535</u>	<u>\$14,125</u>	<u>\$15,715</u>	<u>\$17,306</u>	<u>\$18,906</u>
Other assets							
Collection	\$1	\$1	\$1	\$1	\$1	\$1	\$1
Capital assets	\$184,067	\$262,217	\$276,222	\$269,772	\$260,072	\$250,371	\$240,671
TOTAL ASSETS	<u>\$316,566</u>	<u>\$304,317</u>	<u>\$289,758</u>	<u>\$283,898</u>	<u>\$275,788</u>	<u>\$267,678</u>	<u>\$259,578</u>
LIABILITIES AND EQUITY							
Current liabilities							
Accounts payable and accrued liabilities	\$18,704	\$12,000	\$4,150	\$5,650	\$7,150	\$8,650	\$10,150
Current portion of employee future benefits	\$283	\$280	\$270	\$260	\$250	\$240	\$240
Deferred revenue	\$109,338	\$26,226	\$8,046	\$7,046	\$7,046	\$7,046	\$7,046
	<u>\$128,325</u>	<u>\$38,506</u>	<u>\$12,466</u>	<u>\$12,956</u>	<u>\$14,446</u>	<u>\$15,936</u>	<u>\$17,436</u>
Other liabilities							
Employee future benefits	\$310	\$120	\$120	\$120	\$120	\$120	\$120
Long-term advance	\$4,208	\$4,208	\$4,208	\$4,208	\$4,208	\$4,208	\$4,208
Deferred capital funding	\$170,507	\$248,757	\$262,862	\$256,512	\$246,912	\$237,312	\$227,712
	<u>\$303,350</u>	<u>\$291,591</u>	<u>\$279,656</u>	<u>\$273,796</u>	<u>\$265,686</u>	<u>\$257,576</u>	<u>\$249,476</u>
Net assets							
Unrestricted	\$3,114	\$2,624	\$0	\$0	\$0	\$0	\$0
Investment in Capital	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102
	<u>\$13,216</u>	<u>\$12,726</u>	<u>\$10,102</u>	<u>\$10,102</u>	<u>\$10,102</u>	<u>\$10,102</u>	<u>\$10,102</u>
TOTAL LIABILITIES AND NET ASSETS	<u>\$316,566</u>	<u>\$304,317</u>	<u>\$289,758</u>	<u>\$283,898</u>	<u>\$275,788</u>	<u>\$267,678</u>	<u>\$259,578</u>

Table 3 – Income Statement

<i>(in thousands of \$)</i>	<i>2017- 2018 Actual</i>	<i>2018- 2019 Forecast</i>	<i>2019- 2020 Budget</i>	<i>2020- 2021</i>	<i>2021- 2022 Projections</i>	<i>2022- 2023</i>	<i>2023- 2024</i>
REVENUE							
Admission and programs							
Science and Technology	\$1,786	\$3,500	\$3,200	\$2,000	\$1,800	\$1,820	\$1,830
Aviation and Space	\$949	\$760	\$760	\$770	\$780	\$790	\$800
Agriculture and Food	\$898	\$730	\$730	\$740	\$750	\$760	\$770
Boutique Sales	\$874	\$1,400	\$1,300	\$1,250	\$1,200	\$1,220	\$1,220
Facility Rentals and concessions	\$621	\$620	\$640	\$660	\$680	\$680	\$700
Parking	\$902	\$1,000	\$800	\$780	\$760	\$760	\$760
Membership	\$667	\$1,200	\$1,000	\$850	\$800	\$800	\$810
Farm Operations	\$338	\$300	\$300	\$300	\$300	\$300	\$300
Thematic Experiences	\$88	\$80	\$90	\$95	\$95	\$95	\$95
Other	\$400	\$400	\$250	\$250	\$250	\$250	\$250
Total operating revenue	\$7,523	\$9,990	\$9,070	\$7,695	\$7,415	\$7,475	\$7,535
Contributions	\$4,084	\$1,600	\$1,600	\$1,700	\$1,700	\$1,700	\$1,700
Interest	\$1,573	\$1,200	\$400	\$200	\$150	\$100	\$50
TOTAL REVENUE	\$13,180	\$12,790	\$11,070	\$9,595	\$9,265	\$9,275	\$9,285
EXPENSES							
Heritage preservation and research	\$5,158	\$6,300	\$5,600	\$5,100	\$4,500	\$4,500	\$4,500
Exhibits, programs and outreach	\$18,501	\$16,474	\$14,909	\$13,009	\$13,092	\$12,937	\$12,912
Internal services	\$8,271	\$8,250	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000
Museum and collection buildings	\$15,329	\$17,300	\$20,102	\$21,403	\$20,590	\$20,755	\$20,790
TOTAL EXPENSES	\$47,259	\$48,324	\$48,611	\$47,512	\$46,182	\$46,192	\$46,202
Net Results of operations before government funding	-\$34,079	-\$35,534	-\$37,541	-\$37,917	-\$36,917	-\$36,917	-\$36,917
Parliamentary Appropriation*	\$34,021	\$35,044	\$34,917	\$37,917	\$36,917	\$36,917	\$36,917
Net earnings (Loss) **	-\$58	-\$490	-\$2,624	\$0	\$0	\$0	\$0

* See table 6

** The Corporation is expecting to use all its unrestricted net assets, garnered from accumulated surpluses in previous years, to invest in remedial works in the CSTM in 2018-2019 and to address cost pressures related to the C3 construction in 2019-2020, and consequently, will post losses for those years.

Table 4 – Statement of Cash Flows

<i>(in thousands of \$)</i>	2017- 2018 <i>Actual</i>	2018- 2019 <i>Forecast</i>	2019- 2020 <i>Budget</i>	2020- 2021	2021- 2022	2022- 2023	2023- 2024 <i>Projections</i>
OPERATING ACTIVITIES							
Cash received (clients)	\$10,655	\$12,441	\$9,370	\$7,996	\$7,415	\$7,476	\$7,535
Parliamentary Appropriations received for operations	\$28,859	\$28,644	\$26,517	\$27,517	\$26,519	\$26,519	\$26,517
Cash paid to suppliers	-\$18,374	-\$48,543	-\$47,971	-\$35,522	-\$34,192	-\$34,201	-\$34,202
Payments related to salary and benefits	-\$21,028	-\$19,550	-\$19,550	-\$19,550	-\$19,550	-\$19,549	-\$19,548
Cash Received from the Foundation	\$230	\$1,600	\$1,600	\$1,700	\$1,700	\$1,700	\$1,700
Interest received	\$1,448	\$1,200	\$400	\$200	\$150	\$100	\$50
Net cash flows generated from/used for Operating Activities	\$1,790	-\$4,658	-\$10,084	\$1,891	\$1,592	\$1,594	\$1,600
CAPITAL ACTIVITIES							
Payments related to capital acquisitions	-\$69,658	-\$84,650	-\$22,505	-\$4,050	-\$800	-\$800	-\$800
Net Cash used through Capital Activities	-\$69,658	-\$84,650	-\$22,505	-\$4,050	-\$800	-\$800	-\$800
FINANCING ACTIVITIES							
Funding for acquisition of capital assets	\$117,686	\$1,538	\$4,325	\$3,049	\$798	\$797	\$800
Net cash flows from Financing Activities	\$117,686	\$1,538	\$4,325	\$3,049	\$798	\$797	\$800
Increase (Decrease) in Cash and short-term investments	\$49,818	-\$87,770	-\$28,264	\$890	\$1,590	\$1,591	\$1,600
Cash and cash equivalents, beginning of year	\$77,176	\$126,994	\$39,224	\$10,960	\$11,850	\$13,440	\$15,031
Cash and cash equivalents, end of year	\$126,994	\$39,224	\$10,960	\$11,850	\$13,440	\$15,031	\$16,631

Table 5 – Changes in Net Assets

<i>(in thousands of \$)</i>	2017- 2018 <i>Actual</i>	2018- 2019 <i>Forecast</i>	2019- 2020 <i>Budget</i>	2020- 2021	2021- 2022	2022- 2023	2023- 2024 <i>Projections</i>
Investment in capital assets, beginning of period	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102
Changes in investment in capital assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Investment in capital assets, end of period	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102
Unrestricted net assets, beginning of period	\$3,172	\$3,114	\$2,624	\$0	\$0	\$0	\$0
Surplus (loss) for the period	-\$58	-\$490	-\$2,624	\$0	\$0	\$0	\$0
Unrestricted net assets, end of period	\$3,114	\$2,624	\$0	\$0	\$0	\$0	\$0
Net assets, end of period	\$13,216	\$12,726	\$10,102	\$10,102	\$10,102	\$10,102	\$10,102

Table 6 – Parliamentary Funding

<i>(in thousands of \$)</i>	<i>2017- 2018 Actual</i>	<i>2018- 2019 Forecast</i>	<i>2019- 2020 Budget</i>	<i>2020- 2021</i>	<i>2021- 2022</i>	<i>2022- 2023</i>	<i>2023- 2024</i>
				<i>Projections</i>			
Base Appropriations	\$26,865	\$27,308	\$27,317	\$27,317	\$27,317	\$27,317	\$27,317
One time funding	\$750	\$24	\$0	\$0	\$0	\$0	\$0
Health and safety projects	\$430	\$2,850	\$3,525	\$3,250	\$0	\$0	\$0
CSTM mold remediation project	\$168	\$0	\$0	\$0	\$0	\$0	\$0
Management reserve clawback	-\$2,500	\$0	\$0	\$0	\$0	\$0	\$0
CSTM Infrastructure renewal	\$8,750	\$0	\$0	\$0	\$0	\$0	\$0
C3 construction project	\$110,815	\$0	\$0	\$0	\$0	\$0	\$0
Sub-Total <i>Main Estimates</i>	\$145,278	\$30,182	\$30,842	\$30,567	\$27,317	\$27,317	\$27,317
Deferred appropriations used in current year	\$18,340	\$83,112	\$18,180	\$1,000	\$0	\$0	\$0
Appropriations approved in current year for specific projects in future years	-\$64,113	\$0	\$0	\$0	\$0	\$0	\$0
Amount used to purchase capital assets	-\$70,835	-\$84,650	-\$22,505	-\$4,050	-\$800	-\$800	-\$800
Amortization of deferred Capital funding	\$5,351	\$6,400	\$8,400	\$10,400	\$10,400	\$10,400	\$10,400
Appropriations reported in Statements	\$34,021	\$35,044	\$34,917	\$37,917	\$36,917	\$36,917	\$36,917

4.2.1 Notes supporting the financial assumptions

Detailed Revenue Assumptions

Admission revenue: The projected revenue from admissions for 2019–2020 is based on a mixture of visitors that will pay admission at the gate, as well as the visitors that enter as members, through programs and events, or facility rentals. In 2017, admission prices increased with the re-opening of CSTM.

Programming revenue: Visitors also come to the museums through programming activities, including education programs for school groups, seasonal camps, guided tours and birthday parties. The majority of revenues in this category are generated from school programs and its popular camps, which provide unique experiences, such as scientific experiments and farm animal care. The projected programming revenue for 2019–2020 assumes 64,000 students participating in school programs and 2,485 campers.

Membership revenue: The Corporation offers a tiered membership program, with categories for families, seniors, students, major donors and others. Membership privileges include: unlimited admission to the CSTM, CASM and CAFM; discounts on merchandise in the museums' gift shops and cafeterias; early registration to summer camps, and exclusive members-only events and tours. The Corporation launched an aggressive membership campaign coinciding with the re-opening the CSTM, yielding a record-high number of new and relapsed memberships of over 17,000 in 12 months. The Corporation assumes a renewal rate of 55% and 25% in new memberships, which is being supported by promotional campaigns and technological solutions to foster and facilitate renewals.

Retail revenue: Two museums have boutiques on site (CASM and CSTM), complemented by a corporate online retail site that sells books, toys games, giftware, apparel, and branded merchandise related to the content of each museum. Data provided by the Museum Store Association indicates an average spending of \$3.23 per museum visitor (2014 MSA Retail Industry Report). The Corporation's net retail revenue of \$1.85 per visitor is lower than the national average due to the museums' limited marketing budget and

investment needed to improve the online boutique. The Corporation continues to review its product mix to develop museum-specific merchandise with better margins and to consumer interest in order to raise the average amount spent per visitor.

Parking revenue: Parking at the museum sites is available at a maximum charge of \$8 per day. The parking revenue is shared with a third party which monitors the lots, collects parking fees and maintains the meters. The Corporation has an agreement with the Montfort Hospital for employee parking at CASM, which has been renewed until late 2019. A temporary parking lot was created on the CSTM site to serve consultants and construction workers, as well as for museum visitors, during the construction of the Collections Conservation Centre. These temporary parking arrangements are driving a peak in parking revenue in 2018-2019, forecasted at \$1 million. In 2019-2020 and beyond, the parking revenues will level off at around \$800,000.

Facility rentals revenue: The calculation of facility rentals revenue uses a fee-per-event model plus a profit-sharing model with an on-site food services provider at CASM and CSTM. Preferred caterers also pay an annual fee. The awareness of rental spaces in the CAFM Learning Centre, the CASM and the renewed CSTM has grown rapidly in recent years. A new facility rental marketing and sales strategy was implemented in 2018. It is assumed that in 2019-2020, the number of bookings for all rentable spaces in the museums will total 200 events, plus concession revenue. Over the planning period, the Corporation assumes a modest increase in rentals and in the profit margin per rental.

Thematic experiences revenue: Visitors may participate in unique experiences at the CAFM and CASM for an additional fee. The CASM has the most success with these experiences, about 1,000 simulator rides and 2,500 aircraft rides are taken annually, with rides provided by pilots of the Rockcliffe Flying Club. The Corporation assumes sustained participation in these experiences over the period.

Farm operations revenue: The CAFM includes a demonstration working farm which generates revenues from milk production. While year-over-year milk production is consistent, these revenues are expected to be lower as of 2019-2020 to reflect a decrease in Canadian milk prices expected with the increased importation of milk products as a result of the higher import quota stemming from trade negotiations.

Other (miscellaneous) revenue: The revenues in this category depend heavily on the production and uptake of travelling exhibitions and the number of special events at the museums. Licensing and copyright fees are also recognized as revenues in this category. During the CSTM's closure, many new travelling exhibitions were developed, including some in digital formats, which were hosted by a variety of venues. Many of special events were hosted at the museums linked to special exhibitions and initiatives and for the CSTM's re-opening. The projected revenue for the budget year of \$250,000 reflects the consistent base amount of revenues typically garnered.

Sponsorships and contributions: The Corporation expects to continue to generate sponsorships and contributions over the period. Sponsorships and contributions peaked in 2017-2018 as the Corporation recognized funds used for the CSTM renewal. The sponsorship target of \$1.6 million for 2019-2020 is deemed feasible given the Corporation's expanding pool of collaborators and its track-record of successful initiatives and programs, including the *Let's Talk Energy* national energy literacy program. Target projections for the remaining planning period is \$1.7 million in contributions, which reflects an increase that is expected to be garnered by providing new research, exhibition and programming opportunities with the Collections Conservation Centre facility.

Interest revenue: The short-term cash balance is invested in low-risk vehicles (i.e. GICs) with an expected yield of 1.5%. The cash balance being carried in 2018-2019 is associated with the capital funds in reserve to complete the Collections Conservation Centre as well as the health and safety infrastructure recapitalization projects. Ingenium is also yielding interest income earned on its equity.

Description of the Core Responsibilities

Heritage Preservation and Research includes all activities dedicated to developing and caring for the collection, such as cataloguing and conserving artifacts and archives, conducting historical research, and providing library and information management services. It also includes the costs for preparing the collection and moving it to the new Collections Conservation Centre. Curatorial, conservation and collection staff salaries are included here.

Exhibits, Programs and Outreach includes all the activities dedicated to the interpretation of the collection and the demonstration of scientific and technological processes through exhibitions, national initiatives, educational resources and outreach offerings. Salaries of the museums' staff are included in this category.

Museum and Collection Buildings refers to all of the activities to operate and care for the accommodations and physical environments that are required to house, protect and display the collection; the technical conservation and collection laboratories; the public museum facilities; and administration space for staff. This includes the salaries for facilities management staff.

Internal services support all of the Corporation's activities, including those that pertain to governance and management of resources and activities, as well as compliance and reporting. It involves the efforts to increase revenue generation through sponsorships and commercial activities, and the administrative support provided to the Ingenium Foundation, a registered charity and separate legal entity.

4.3 Operating Budget

The table below shows the Corporation's operating budget by key activity on a cash basis.

The Corporation received temporary operating funding associated with two capital projects:

- In 2018-2019, the Corporation spent the final amount of temporary, multi-year funding it received in 2014 for mold remediation and move out and then back into the CSTM, and vacate the temporary leased facility that stored CSTM assets during its closure.
- The \$6.5 million temporary funding it received in 2016-2017 and 2017-2018 for expenses associated with early termination of building leases and moving into the C3 will be spent over a longer period (to 2020-2021) to reflect the move schedule as a result of construction delays.

The forecasted operating expenses for 2018-2019 are slightly higher than budgeted to meet the high attendance at CSTM as well as for increases in fixed facilities costs. Advertising and promotional activities were increased coinciding with the re-opening of the CSTM and hosting special exhibitions at the CSTM and the CASM over summer 2018. It also reflects the impact of the minimum wage increase in Ontario in 2018.

To operate its 19 facilities, the Corporation incurs substantial fixed, non-discretionary expenses like rent, Payments-in-lieu-of-taxes (PILT), and utilities, the costs of which are determined by market prices and contract negotiations. The Corporation attempts to slow the increase in facilities costs by employing

energy efficiency strategies, carrying out only essential maintenance, and other cost containment measures given that appropriations are not indexed. Where it cannot off-set inflation, it reduces discretionary spending on the collection, exhibitions and program spending.

The Corporation will experience a significant spike in expenses in 2019-2020 mainly due to additional in PILT, utilities and property management costs associated with operating the re-opened CSTM as well as new Collections Conservation Centre, while it concurrently operates leased facilities during the move. The PILT increase for the CSTM is preliminary until the City of Ottawa has completed its assessment, at which point the City could argue for retroactive payments should the final CSTM PILT significantly exceed the estimate. The Corporation is also waiting for a final resolution in terms of the PILT increase for CASM following its renovations completed in 2011. The savings in property taxes as the leases are terminated, will be reallocated to the PILT costs. The definitive amount of PILT for the C3 will be known once the City has evaluated the completed building.

Spending in exhibitions and programs will return to pre-CSTM closure levels, during which time the Corporation invested in new travelling exhibitions and digital experiences in order to continue deliver on its program mandate.

Table 7 – Operating Budget by Major Activity

<i>(in thousands of \$)</i>	2017-2018	2018-2019		2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
	<i>Actuals</i>	<i>Budget</i>	<i>Forecast</i>	<i>Budget</i>			<i>Projections</i>	
Personnel costs	20,967	20,000	21,000	20,800	20,400	20,500	20,500	20,500
Facilities fixed costs	9,283	9,055	9,805	10,507	9,803	8,990	9,155	9,190
Mold remediation	1,103	112	112	-	-	-	-	-
Collection moving	250	3,000	2,000	1,150	600	-	-	-
Amortization	5,872	6,500	7,600	8,500	10,500	10,500	10,500	10,500
Collection development and management	690	590	590	600	600	600	600	600
Programming and exhibitions	5,270	3,065	4,067	4,025	2,709	2,702	2,547	2,522
Internal services support	1,850	1,650	1,650	1,650	1,650	1,670	1,690	1,690
Advertising	1,485	800	800	700	600	600	600	600
Gift shop products	489	700	700	670	650	620	600	600
Total accrual basis	47,259	45,472	48,324	48,611	47,512	46,182	46,192	46,202
Less Increase in accounts payable *	-	-	-	(1,474)	(1,500)	(1,500)	(1,500)	(1,500)
Less amortization **	(5,772)	(6,400)	(7,500)	(8,400)	(10,400)	(10,400)	(10,400)	(10,400)
Total cash basis	41,487	39,072	40,824	38,737	35,612	34,282	34,292	34,302

* This refers to Payments-in-lieu-of-taxes (PILT) payable for the Collections Conservation Centre.

** The difference in amortization is due to amount spent of \$100,000 each year.

4.4 Capital Budget

The capital budget for 2019–2020 will be used to complete the Collections Conservation Centre in 2019 and pursue health and safety-related recapitalization projects through 2021, thanks to special funding from budget 2016. It will use a base capital budget of \$800,000 to make essential lifecycle repairs and replacements to critical corporate assets, including its building systems, information technology, and laboratory and material handling equipment, furniture and fixtures, and produce permanent exhibitions funded from sponsorships. The base appropriation level permits only minimal investment in essential replacement or critical repairs of assets to extend their useful life. The base funding represents less than

0.005% of the total value its capital assets (excluding the national science and technology collection), which was market valued at \$184.067 million as of March 31, 2018, with a large portion being depreciated.

With audience expectations for digital and interactive cultural content forms increasingly deepening and technology advancing rapidly, appropriate physical and digital technology equipment is a necessity that requires constant upgrades. The Corporation also continues to focus investments in digital infrastructure and technology that support program delivery and lead to operational efficiencies. Hence, the largest portion of the base capital budget will be spent on IT technology, with a significant portion going for the acquisition of new data servers, and the roll-out the Exhibition Management System at CASM and CAFM (2019-2023). This will allow museum staff to more effectively manage exhibitions' digital components, ultimately for improved visitor experience.

The Corporation's capital budget on a cash basis is presented in the context of a five-year capital spending outlook in the table below.

Table 8 – Capital Budget

<i>(in thousands of \$)</i>	2017-2018	2018-2019		2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
	<i>Actual</i>	<i>Budget</i>	<i>Forecast</i>	<i>Budget</i>	<i>Projections</i>			
<i>Heritage preservation & research</i>								
Technical equipment	36	75	25	75	50	50	50	50
<i>Exhibitions, programs & outreach</i>								
Farm equipment	25	25	50	25	50	50	50	50
Permanent exhibitions	790	0	600	0	0	0	0	0
<i>Museum and collection buildings</i>								
CSTM Modernization	22,930	-	-	-	-	-	-	-
Collections Conservation Centre	46,702	80,000	79,000	19,654	-	-	-	-
Health & Safety projects	1,042	2,850	2,850	3,525	3,250	-	-	-
CSTM Lifecycle repairs	0	150	450	150	150	150	150	150
CASM Lifecycle repairs	0	125	100	125	125	125	125	125
CAFM Lifecycle repairs	0	75	50	75	75	75	75	75
Security equipment	25	0	0	0	50	50	50	50
Tenant improvements	0	0	0	0	0	0	0	0
<i>Internal services</i>								
Fleet and other equipment	0	75	0	75	100	100	100	100
IT infrastructure	75	275	125	250	200	200	200	200
Total (cash basis)	71,625	83,650	83,250	23,979	\$4,050	\$800	\$800	\$800

4.4.1 Health and Safety Projects

In 2016-2017, the government approved five-year capital funding of \$12.624 million for the Corporation to make repairs and recapitalize its facilities and equipment in order to address health and safety concerns and resolve deferred recapitalization. The majority of the Corporation's accumulated deferred capital repairs are being addressed with these funds.

With respect to the projects identified for completion to date, the fire suppression for buildings 94 and 95 at CAFM is delayed. While plans have been finalized, the actual work will occur over 2019-2020. As these

buildings are owned by the Department of Agriculture and Agri-food Canada and are considered heritage buildings, both the Department and the National Capital Commission must give their permission for the Corporation to proceed with this work. This is also true of the new parking and civil work at CAFM, which is one-year delayed as plans have not yet been finalized for work to begin.

In 2019-2020, the Corporation will complete the lifecycle replacements on the CASM main museum building, as well as exterior envelope repairs on buildings 193 and 194 and the aviation collection hangar. It will also begin planning for the repairs of the runway perimeter fence.

All the projects have been completed within \pm 5-10% of their estimate, allowing the Corporation to remain within the overall allocation for these projects. The table below lists the projects and their status.

Table 9 – Funded Health and Safety related projects

<i>Funded projects</i>	<i>Fiscal Years</i>	<i>Status</i>
Roof patching, drain repairs and install roof-top HVAC units at 2380 and 2495 Lancaster	2016-17	Completed in 2016-17
Farm Operations Equipment Replacement at CAFM (feed silo and dairy production equipment)	2016-17	Completed in 2017-18
Install fire suppression and stand-by power for Buildings 94 and 95 at CAFM	2016-17	Partly done in 2017-18
Restoration of the Lighthouse on the CSTM site	2017-18	Completed in 2017-18
Upgrade elevator cabs and hydraulic systems in CASM main building	2017-18	Completed in 2018-19
Building lifecycle repairs and replacements, interior and exterior of CASM main building	2017-18 to 2019-20	Multiple projects completed and more underway
Renovation of buildings 193 and 194 at CASM (roof, HVAC and fire, life and safety systems)	2018-19 to 2020-21	Work underway
Civil work at CAFM to enhance visitor access (entrance and parking relocation, new signage and lighting)	2018-19 to 2020-21	Planning 90% complete; work is 1 year delayed
Repair perimeter fence to secure airport runway at CASM	2020-21	Planning will begin in 2019-20
Total		

4.4.2 Collections Conservation Centre

As part of the federal infrastructure initiative announced in Budget 2016, the Corporation received capital funding totalling \$150.2 million, to construct a new Collections Conservation Centre to preserve and protect priceless Canadian heritage artifacts. This building will provide specialized temperature and humidity controlled, sealed and secure artifact storage, as well as laboratories and workshops, library and archives and corporate offices. The Corporation will be the Centre's primary occupant, which will include space for the National Gallery of Canada (NGC), both are part of the Canadian Heritage Portfolio. Co-tenancy will build on natural synergies and lead to efficiencies.

Budget status

The construction estimate of \$150.2 million was derived from a 2010 order of magnitude (\pm 50%) plus an inflation factor to 2016 dollars. The Corporation expects to use all the funding available for the project. In fact, as planning and design evolved, a number of issues arose that significantly increased the estimated cost of construction. The total forecasted budget as of 2019-2020 is \$152.7 million.

A number of the early tender packages received bids below the estimates, such as excavation, foundation, concrete structure, mechanical and electrical, this trend reversed with the bids for building envelope enclosure and interior finishes packages issued over 2018 received well over estimates. These higher than

expected costs have had to be absorbed by the project’s contingency. Contingency funds are also allocated to each tender package for unforeseen like quantity increases, change orders, on-site issues and design gaps as the work unfolds. The forecast spending on base building construction and interior fit-up combined is \$121.3 million, against the \$118 million estimated, with the gap coming from contingency.

To mid-year 2018-2019, the Corporation had already allocated all of the project’s contingency funds to ensure that it is possible to address construction issues, design gaps, client changes, and deficiencies required to complete the works already contracted and underway. The following tables provide the spending against key categories of the project budget.

Table 10 – Cost Breakdown for the Collections Conservation Centre Project

	2016-2017 Actual	2017-2018 Forecast	2018-2019 Budget	2018-2019 Forecast	2019-2020 Budget	Total cost
Base building construction	\$4,593,496	\$36,095,613	\$53,184,004	\$61,107,184	\$7,103,407	\$108,900,000
Interior fit-up	\$0	\$0	\$10,727,750	\$4,082,039	\$8,717,961	\$12,800,000
Professional services fees	\$2,749,950	\$8,867,226	\$4,996,675	\$4,042,917	\$1,740,907	\$17,600,000
Contingency	\$0	\$1,739,551	\$11,091,625	\$9,768,430	\$2,092,019	\$13,800,000
Total per year	\$7,343,747	\$46,702,390	\$80,000,054	\$78,999,570	\$19,654,294	\$152,700,000

With the current funds available, the project is able to meet a number of its objectives, including provide safer access to the collections; appropriate temperature and humidity-controlled and secure environments and new labs for preservation of the collection; consolidate staff with collections and labs for increased productivity and efficiency; and establish a new research institute on the collection.

Schedule status

Over 2018-2019, the exterior envelope was be completed, the building’s mechanical, electrical, plumbing systems come online, and crews substantially completed the exterior and interior finishes such as cladding, painting and flooring, information technology, audio-visual and security cabling and fixtures installation, equipment and furniture installation, and a portion of racking and shelving installation began.

The Corporation expects to meet the remaining project milestones:

- that the building will be completed to proceed with obtaining occupancy by March 31, 2019;
- deficiency correction and project close-out activities by May 31, 2019;
- the exterior permanent and temporary train tracks will be installed by, and the final exterior site work completed by July 2019.

Moving will begin in winter 2019, starting with the oversized artifacts on the ground floor, followed by the trains by late summer and staff, library and archives in the fall 2019. The installation of racking and shelving, acquired as funding becomes available, will continue well into 2020, while the move of the collection is expected to take until mid-2021.

