



Summary of  
**2015-2016 to 2019-2020**  
CORPORATE PLAN

Summary of  
**2015-2016**  
OPERATING BUDGET

Summary of  
**2015-2016**  
CAPITAL BUDGET



CANADA SCIENCE AND TECHNOLOGY  
MUSEUMS CORPORATION

AGRICULTURE - FOOD  
AVIATION - SPACE  
SCIENCE - TECHNOLOGY



Canada

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## EXECUTIVE SUMMARY

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The National Museum of Science and Technology (NMST or the Corporation) is mandated to preserve Canada's scientific and technological heritage, and to promote, celebrate, and share knowledge of that heritage with Canadians. A federal Crown Corporation, the NMST proudly operates the Canada Science and Technology Museum (CSTM) and its two affiliated museums: the Canada Aviation and Space Museum (CASM) and the Canada Agriculture and Food Museum (CAFM). The NMST's common use name is the Canada Science and Technology Museums Corporation (CSTM). The NMST uses, displays and interprets Canada's science and technology innovations to inspire Canadian youth to carry on the tradition of developing value from knowledge, and generating ideas to produce something new or improved.

The 2015–2016 fiscal year marks the start of a new five-year planning cycle for the NMST. The executive leadership team took this opportunity to reflect on what the NMST was and where it wanted to go and what its future should be. Moving forward over the next five-years, the three national museums not only will display Canada's scientific and technological history, but they will also be places where new ideas are sparked. The CSTM, CASM and CAFM will create experiences that tell the stories of great Canadians and their innovations. They will illustrate modern scientific and technological developments and developers—and the commercial partners that will nurture them. They will offer experiences to Canadians that will make them proud of their past, and that will motivate future innovators. The museums will be inspiring places where Canada's scientific and technological past meets the innovations of the future.

The NMST will pursue more initiatives to increase its digital footprint. Activities will not only focus on creating a digital representation of the national science and technology collection, but also pushing out the museums' content in a variety of innovative and creative ways. To remain relevant and innovative, the Corporation will explore ways that it can take advantage of information technologies and social media to deliver museum programming more efficiently and effectively, and provide access to its collection to a greater number of Canadians. With the aim of becoming a digital citizen, the NMST will enhance its participation in the digital public sphere, actively engage with communities and celebrate Canadian innovation and remain transparent and open.

### New Strategic Objectives

Reflecting both the current challenges and the long-term goals for the planning period of 2015–2016 to 2019–2020, the NMST established a series of new Strategic Objectives and corporate-wide strategies to attain them. The selected way forward will transform the NMST's museums into leading-edge institutions. The CSTM, CASM and CAFM will proudly and properly display Canada's scientific and technological history and will be places where

ideas are sparked and people are inspired. The NMST will undertake activities to help promote a national culture of science, technology, and innovation with a particular focus on youth—the innovators of tomorrow. These activities will include digitizing the museum experience, offering a partnership hub for Canadian scientific culture and enterprise, and being a springboard to launch the next scientific or technological breakthrough.

## Planned Activities

Throughout 2015–2016, the NMST will be pursuing a variety of activities in support of the five new strategic objectives, while continuing to provide excellent visitor experiences at the CASM and CAFM, as well as focusing on implementing the new National Outreach Strategy during the closure of the CSTM. The five new strategic objectives and their associated key activities are:

### ***Best in Class – Collection***

- Continue digitizing the Collection
- Develop virtual collection tours
- Continue work on the Collection rationalization project

### ***Best in Class – Education and Exhibitions***

- Open **Life in Orbit: The International Space Station** exhibition at CASM -  
Implement a national learning strategy
- Work on Canada's 150th anniversary celebration activities

### ***National Outreach***

- Continue working on the Open Data project
- Build outreach pipelines and networks
- Develop new marketing and branding strategies
- Develop itineraries for food science and gaming-themed exhibitions

### ***Sustainable and Profitable***

- Implement the newly developed business plans for the CSTM, CASM and CAFM
- Grow business development

### ***Renewed and Innovative Infrastructure***

- Begin work on the modernization of the CSTM
- Continue to speak with government and the private sector to pursue the development of a purpose built building for the storage and preservation of the national collection
- Complete the development of a business case for an aviation training and research centre at CASM
- Launch an awareness campaign for a food security and nutrition centre

### **Funding and Revenues**

In 2015–2016, the NMST will receive operating and capital appropriations totalling \$59.110 million from the Government of Canada, which includes a base appropriation of \$26.865 million; \$2.890 million in temporary operating funding for the Canada Science and Technology Museum mold remediation and stabilization plan; and \$29.355 million in temporary capital funding for the infrastructure renewal and modernization of the CSTM.

Over the same period, the NMST expects to generate an additional \$4.810 million in revenue (from admissions to CAFM and CASM, memberships and programming, commercial operations, and sponsorships, in-kind and philanthropic donations).

Additional funding totalling \$80.5 million over 2014–2015 to 2017–2018 has been approved to implement the CSTM mold remediation and stabilization plan and infrastructure renewal. This will address longstanding structural problems as well as allow the museum to modernize the exhibition spaces and create a more engaging visitor experience, one reflective of Canada’s science and innovation past and future.

### **Key Risks**

The NMST conducts an annual SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) to identify and assess the organizational-level risks. The three key risks that have been identified as the highest in terms of impact and likelihood include endangering the national collection in storage due to inappropriate housing conditions; potential cost overruns for the major capital infrastructure project; and the widening gap between operating costs and revenues and the resulting loss of relevance due to limited capacity to invest in new programming and exhibitions. All of the risks have mitigation plans and are monitored closely.

## 1.0 MANDATE

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### Government Legislation

The National Museum of Science and Technology (NMST or the Corporation) was established as an autonomous Crown corporation on July 1, 1990, with the passage of the *Museums Act*. The NMST operates at arm's length from Government with regard to operating and programming decisions. The NMST<sup>1</sup> proudly operates the Canada Science and Technology Museum (CSTM), and two affiliated national museums: the Canada Aviation and Space Museum (CASM) and the Canada Agriculture and Food Museum (CAFM). The NMST's commonly used name is the Canada Science and Technology Museums Corporation (CSTMC).<sup>2</sup>

Under the *Museums Act*, the National Museum of Science and Technology is a distinct legal entity, wholly owned by the Government of Canada. The NMST is subject to the financial provisions governing Crown corporations set out in Part X of the *Financial Administration Act*, and is required to comply with a range of other statutes including those governing official languages, employment equity, multiculturalism, and access to information and privacy.

### Public Policy Role

The NMST's broad public policy role is expressed in the preamble of the *Museums Act*, which states that, each National Museum:

- "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 (as stated in the *Museums Act*)

"To foster scientific and technological literacy throughout Canada by establishing, maintaining and developing a collection of scientific and technological objects, with special

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<sup>1</sup> The NMST's commonly used name is the Canada Science and Technology Museums Corporation (CSTMC). It is the name used publicly in communications, other than when the legal name is required.

<sup>2</sup> These are the museum names that appear in the Registry of Applied Titles ([www.tbs-sct.gc.ca/fip-pcim/reg-eng.asp](http://www.tbs-sct.gc.ca/fip-pcim/reg-eng.asp)). The legal name of the CSTM is the National Museum of Science and Technology; the legal name of the CASM is the National Aviation Museum; the legal name for the CAFM is the Canada Agriculture Museum. The use of "the Corporation" refers to the governing body of the museums. The use of "the museums" is not meant to imply that the museums are separate legal entities.

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 in a place where innovations of the past meet the future.

### Values

The NMST values include: Pride, Excellence, Leadership, Teamwork and Creativity.

## 1.1 Supporting Government Priorities

The NMST is a member of the Canadian Heritage Portfolio and contributes to the Whole-of-Government outcome of “a vibrant Canadian culture and heritage.” According to the expectations set out by the Government, the Corporation maintains rigorous stewardship over financial resources, assets and human resources.

The NMST’s mandate and activities are aligned with the Government’s priorities with regard to learning, innovation, and research and development in support of the knowledge-based economy. Through educational programs, informative websites, social media tools, digital content and a variety of other media, the Corporation’s three museums give Canadians of all ages the opportunity to engage with science and innovations from Canada’s past, with developments from today, and visions of tomorrow. The NMST aims to inspire youth to explore careers in science, technology, engineering and mathematics, which are sectors vital to Canada’s future economic prosperity.

## 2.0 CORPORATE PROFILE

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### 2.1 Museums and the Collection

The NMST's 3 museums and collection are housed in 19 buildings in 3 locations throughout Ottawa. The Canada Science and Technology Museum, on St. Laurent Boulevard, currently is under renovation and will reopen in 2017 with a new roof and a revitalized exhibition floor. Located nearby are the corporate offices and three storage facilities. The Canada Aviation and Space Museum and Hangar are at the Rockcliffe Airport and the Canada Agriculture and Food Museum is located at the Central Experimental Farm. All three sites have space for exhibitions, programming, facility rentals and offices.

#### Canada Agriculture and Food Museum

The Canada Agriculture and Food Museum's vision is to inspire Canadians to re-engage with the evolution of agriculture. The CAFM aims to inspire visitors, both on-site and virtually, to explore the necessity of agriculture to Canadians' quality of life—food, fibres, energy and industry depend on it.

To realize this vision, the CAFM will work with national partners to showcase Canadian innovations in agricultural science, technology, and practices from the past, and will explore contemporary topics of interest and will champion the future evolution of agriculture in Canada.

The CAFM offers a unique experience: a demonstration working farm combined with museum exhibitions and interpretation. Located in the heart of the nation's capital on the Central Experimental Farm National Historic Site, the museum is a showcase for Canadian agriculture, food production and the science and technology that feeds, clothes and powers the nation.

The CAFM offers programs, special events and exhibitions which explore Canada's proud agricultural heritage, as well as the contemporary benefits and relationships between agriculture and Canadians' everyday lives. The CAFM is committed to focusing on food literacy for the next four years. This theme, relevant to audiences of every age, background and gender, will enable the museum to grow its collaborations and relationships with organizations in the health, food safety, environment, education, and culture sectors.

In 2015–2016 the CAFM will begin an intensive period of national outreach through collaborations and digital resources. In doing so, it aims to raise awareness and financial support for the final phase of the museum's Master Site Plan which includes a food security and nutrition centre.

## Canada Aviation and Space Museum

The Canada Aviation and Space Museum's vision is to invite Canadians to explore the wonders of flight and the contribution of aviation to the transformation and development of Canada. To realize this vision, the CASM will collect, preserve, depict and display aeronautical artefacts and interpret their significance—scientific and technical, social and cultural, historic and contemporary. It will tell the stories of the men and women who followed their dreams and it will provide a venue for the next pioneers and trail blazers to share their exploits and explorations.

The extensive aviation collection of the CASM is deemed by historians and museums alike as among the best in the world. The CASM collects artefacts illustrating the development of aviation in times of peace and war, from the earliest days of manned flight to the present, and into Space. The museum highlights Canadian achievements in aerospace science and technology, complemented by aircrafts and related artefacts from many other nations, thus providing an international context. The CASM aims to be a source of inspiration, both on-site and virtually, for Canada's youth through the presentation and interpretation of innovative discoveries and new horizons in aerospace and aviation both in Canada and the world.

The CASM offers programming that brings aviation history to life and stimulates a lasting interest in the fascinating world of flight. Onsite or online, visitors experience the story of humanity's preoccupation with the dream of flight, and learn about the significant contributions Canadians have made to aviation and space flight, from the 1909 beginnings of flight in Canada, to the present day.

In 2015–2016 the CASM will complete a business case of an aviation training and research centre that would include local college programs, UAV labs and training, collaborations with universities and other aviation museums across the country as well as with Flight Training Schools across Canada and abroad.

## Canada Science and Technology Museum

The Canada Science and Technology Museum is Canada's only comprehensive science and technology museum. It offers dynamic exhibitions and interactive programming as a nexus of knowledge on Canadian science and technology that is shared with Canadians through travelling exhibitions, an extensive website, and an active artefact loan program. It was the first museum in Canada to engage audiences through interactive exhibitions in the area of science and technology.

The CSTM's collection, the most extensive research collection of scientific and technological artefacts in Canada, is particularly rich in the areas of communication, manufacturing,

natural and renewable resources, scientific instrumentation and transportation. The collection of artefacts, trade literature, documents and photographs plays a central role in the museum's exhibitions and is preserved as a resource for future generations of Canadians.

During 2015–2016, the CSTM's major infrastructure renewal project will include addressing the ongoing problems the museum has faced over the past several years. Specifically, the project will replace the roof, retrofit the building to adhere to seismic codes, and improve the external façade. At the same time, the CSTM will modernize the exhibition floor and aligning the transformed exhibition spaces to the research subject matter areas including communications, renewable and non-renewable resources, physical sciences and medicine, and transportation. During the major infrastructure renewal project the CSTM will remain closed and will reopen to the public in 2017.

## 2.2 Governance Structure

### 2.2.1 Board of Trustees

The *Museums Act* provides for a Board of Trustees, consisting of up to 11 trustees (including a Chairperson and a Vice-Chairperson), appointed by the Minister of Canadian Heritage and Official Languages with the approval of the Governor-in-Council (GiC). (Terms of the current Trustees are provided in Annex 2.)

The Board serves as the NMST's governing body and is accountable to Parliament for the affairs of the Corporation through the Minister of Canadian Heritage and Official Languages. The Trustees, acting collectively as the Board, are responsible to oversee the business management, activities and affairs of the NMST, ensuring that strategic issues are resolved, and 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.

### 2.2.2 Board Committees

The Board is supported by four committees: the Executive Committee; the Governance Committee; the Finance, Audit and Risk Management Committee; and the Building Committee. Each committee is governed by its own Terms of Reference (provided in Annex 2). Committees typically meet on a quarterly basis.

## Executive Committee

The Executive Committee (EC) consists of the Chair, the Vice-Chair and two additional Trustees designated by the Board and by the President and Chief Executive Officer (CEO) who sits as a non-voting member. The Committee establishes for Board approval the annual performance objectives of the President and CEO. This Committee also exercises full authority under exceptional circumstances should the full Board of Trustees be unable to meet in a timely fashion.

## Finance, Audit and Risk Management Committee

The Finance, Audit and Risk Management (FARM) Committee oversees the NMST's financial management controls, its practices and its information systems. The Committee reviews and advises the Board of Trustees on the NMST's five-year operating 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 NMST, 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 less than four trustees, plus the President and CEO and the Chair of the Board who are non-voting members of the Committee.

## Governance Committee

The Governance Committee (GC) monitors and reviews the governance of the NMST regarding best practices for corporate governance and stewardship, and recommends appropriate changes to enhance corporate functioning and decision-making. The Governance Committee also supports the Board's responsibility for succession planning.

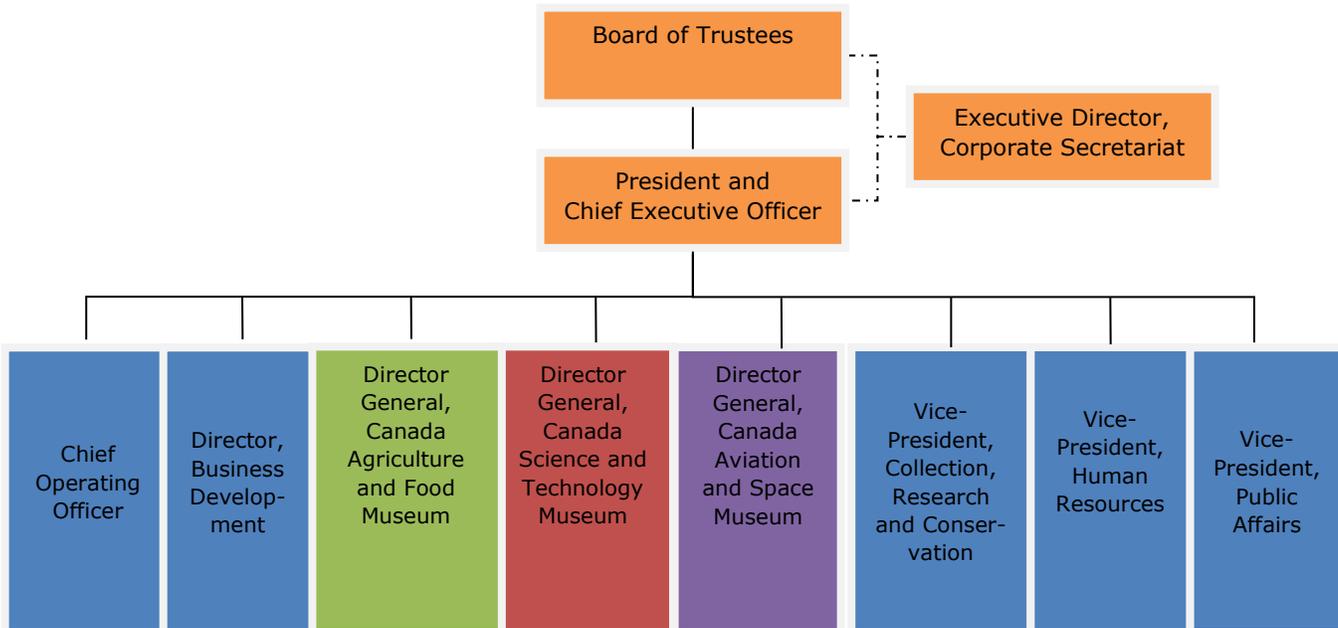
## Building Committee

The Board of Trustees has established the Building Committee for enhanced oversight of the major infrastructure project at the CSTM that the NMST is undertaking, as well as the long-term infrastructure plans for the CSTM, CASM and CAFM. The Terms and References and membership for this new committee were approved in March 2015. The first meeting of the Committee was held on April 23, 2015.

## 2.2.3 Executive Management

The NMST's daily operations are managed by its President and CEO, who is supported by an executive leadership team. The senior managers include the Chief Operating Officer, the Director General of each museum, the Director, Business Development, the Vice-President, Collection, Research and Conservation, the Vice-President, Human Resources, the Vice-President, Public Affairs, and the Executive Director, Corporate Secretariat (see Chart 1 Corporate Reporting Structure).

**Chart 1**  
**Corporate Reporting Structure**



## 2.3 The CSTMC Foundation

On November 14, 2007, a distinct, arm’s-length Canada Science and Technology Museums Corporation Foundation was incorporated to raise funds to complement and strengthen the NMST’s programming.

The Foundation, led by a Board of Directors, undertakes a range of philanthropic initiatives. Directors are recruited based upon their commitment to the mandate of the NMST as well as their ability to generate contributions, and are elected by Members at an annual or special meeting. The 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.

Although the Foundation is a separate entity, the President and CEO of the NMST and Chair of the NMST Board of Trustees, sit on the Foundation’s Board of Directors as *ex officio* members with voting privileges. This is to ensure good communication and alignment of activities to achieve results on corporate priorities. Since its inception, the Foundation has contributed more than \$1.1 million to the NMST.

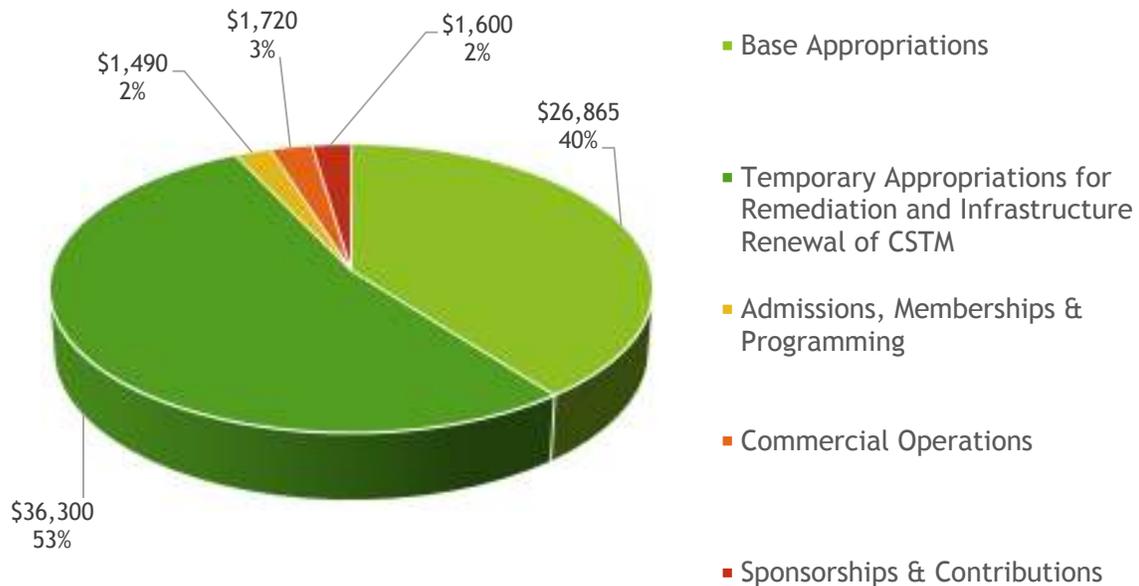
## 2.4 Resources and Expenses

### 2.4.1 Funding and Revenues

In 2015–2016, the NMST will receive total operating and capital appropriations on a cash basis of \$59.110 million from the Government of Canada, including \$26.865 million as a base appropriation for operating and capital for its three national museums, and an additional \$2.890 million in temporary operating funding approved for the CSTM mold remediation plan, and \$29.355 million in temporary capital funding for the CSTM infrastructure renewal project. (The NMST will receive a total one-time funding of \$80.5 million over its base appropriations over four years to complete the mold remediation plan and infrastructure renewal project at the CSTM.)

In 2015–2016, the NMST expects that it will generate an additional \$4.810 million in revenue (from admissions, memberships, programming, commercial operations, sponsorships, in-kind and philanthropic donations), representing 15% of its total operating budget. Due to the closure of the CSTM, the amount of projected revenues is \$1.025 million less than was projected in 2014–2015. Chart 2 illustrates the portion that each source of funds will represent to the NMST.

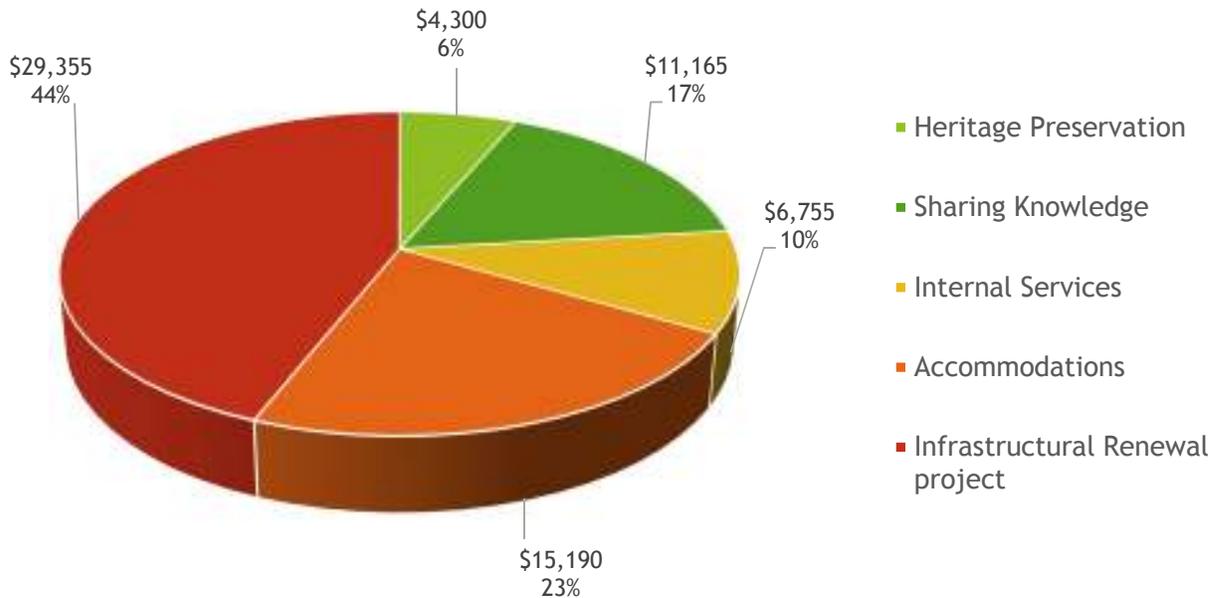
**Chart 2**  
**Source of Funds 2015–2016**



## 2.4.2 Expenditures and Expenses

In 2015–2016, the NMST will spend 41% of its operating expenses of \$37.410 million on Heritage Preservation and Sharing Knowledge programs, which reflect the NMST’s mandate, while the remaining 59% will be devoted to the Internal Services and Accommodations program. Internal Services support all of the Corporation’s activities, and include costs pertaining to governance, management and reporting requirements, as well as efforts to increase revenue-generation through sponsorships and commercial activities. The Accommodations expenditures go to operate the NMST’s three museums’ facilities. In additions to its operating expenses, the NMST will spend \$30.155 million in capital expenses, comprised of \$29.355 million for the CSTM infrastructure renewal project and \$800,000 for other capital repairs.

**Chart 3**  
**Expenditures by Program 2015–2016**  
**(including infrastructural renewal project)**



## 2.4.3 Full-Time Equivalents (FTEs)

The NMST’s knowledgeable and dedicated employees are its greatest asset and key to its success. Collectively, the NMST’s staff strive to fulfill the Corporation’s mandate by inspiring Canadians to understand and engage with science, technology, engineering and mathematics; and in making their visit at the museums an educative, inspiring and memorable experience. In 2015–2016, the NMST projects a count of 207.5 full-time equivalent (FTE) positions.

## 3.0 STRATEGIC ISSUES

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### 3.1 Environmental Scan

#### Demographics

To remain relevant to the citizens they serve, museums must be aware of changing demographics in Canadian society. Most notably, Canada is experiencing an aging population; nearly one in six Canadians is aged 65 or older (Statistics Canada, 2014). Single-person households made up of older, retired Canadians, as well as young professionals living alone, are also on the rise, representing 27.6% of North American households in 2011 (CBC, "Doc Zone", 2014). This growing demographic group is more likely to spend money on travel and leisure activities, and will become a significant part of the NMST's clientele. A large immigrant population must also be taken into consideration. Canada leads all G8 countries, with a 20.6% immigrant population (2011 National Household Survey). One in two Canadian households reports a language other than English or French as its mother tongue.

These demographic trends are diversifying and enriching Canadian society and changing the typical museum visitor. Museums will need to examine ways that they can adjust their programming, services, and accessibility to account for this diverse population. The NMST will take all of these factors into consideration when renewing its facilities, programming, and other offerings in order to be more inclusive of all visitors.

#### Economic Climate

The Canadian economy continues to recover modestly from the recent downturn and is forecast to gain momentum in 2015. In 2014, Canada's tourism industry experienced the largest increase since 2010, in both spending by Canadians at home and by international visitors (Statistics Canada, 2014). Even so, the jobless rate remains high, with many consumers confronting high debt loads and thus reducing the amount of income spent on discretionary items (TD, Provincial Economic Forecast, October 2014). The NMST's commercial operations revenue is dependent on visitation and can be negatively affected by a decrease in discretionary leisure and tourism spending by Canadians. The NMST will continue to monitor these changing economic and tourism trends in Canada in the context of pricing and revenue projections.

#### Crowdfunding

Alternative funding methods are growing in popularity. In addition to rallying for large sponsorship deals, many institutions are also seeking out micro-giving options. Crowdfunding platforms like Kickstarter and Indiegogo reach both national and international communities and allow donors to help fund special projects submitted by individuals or organizations. In 2013, Canadian donors provided \$29 million to a variety of Kickstarter

projects. In the future, the NMST will continue to explore new projects that could be successfully funded using these methods.

## Digital Trends

### The Digital Environment

Canadians are expecting access to cultural content—including museum content—on digital platforms. The proportion of Canadian households online in 2013 was 87%, up from 80% in 2010 (Canadian Internet Registration Authority), while global web traffic is moving increasingly towards mobile devices. The NMST will continue to increase its online offerings and engage the public through social media, online sales, and various forms of digital media.

The use of mobile applications (apps) in museums is an emerging trend which takes advantage of location awareness and GPS to provide supplemental information to the visitor about an exhibition, artefact, or the museum itself. The CASM's *Ace Academy* mobile application (app) gives the visitor a fun and interactive medium to engage from anywhere in the world with the collection, artefacts, and the museum. The *Ace Academy* app has been downloaded more than 13,000 times across 144 countries. This success will allow the NMST to continue to explore best uses of content-rich mobile apps for both on-site applications and outreach opportunities.

Marrying the virtual and physical worlds of museums will become increasingly important as the popularity of 'virtual museum' with online exhibition and collection-based experiences, endures. The NMST will continue to place priority on digitizing the collection, adapting to new technologies, and investigating the best digital strategies and platforms as a means to reach Canadians with stories of their scientific and technological past, present and future. With the intention of becoming a cultural industry leader in the use of digital technologies, the NSTM will begin exploring applications of augmented reality in a museum context.

### Virtual Engagement

One-on-one virtual connections to classrooms, universities, community centres, and seniors' across Canada have been made widely accessible with tools such as Skype, Google Hangouts, FaceTime and video conferencing software. Even more accessible to Canadians is the world of online videos which is forecasted to increase to 79% of all global network traffic by 2018 (CISCO Visual Networking Index: Forecast and Methodology, 2013–2018, 2014), with 6 billion hours of video watched on YouTube per month (YouTube Statistics, 2014). The NMST is well positioned to take advantage of this ongoing trend of disseminating information and to share its collection and stories through a variety of online videos. The NMST will continue to monitor opportunities and trends in digital education and distance learning as a means to engage a geographically expansive and diverse national audience.

Akin to crowdfunding mentioned above is crowdsourcing, which is becoming more popular in cultural institutions and museums around the world. This practise allows the public to actively contribute to a project or activity, which may have not been traditionally possible, or been done over a long timeframe by a single person. Current types of crowdsourcing in museums include transcription or contextualisation of artefacts, adding complementary materials to a collection or co-curation from non-professionals. Crowdsourcing projects in museums benefit from the power in the number and diversity of their audience, and allow the public to become more engaged in a museum's activities.

## Science, Technology, Engineering, Art and Mathematics (STEAM) Education in Canada

Canadians continue to be an engaged and informed population when it comes to STEAM education. In a 2014 study published by the Council of Canadian Academies (prepared for the Government of Canada in response to a request from the Minister of State of Science and Technology on behalf of the NMST), Canadians show increasingly positive attitudes towards science and technology when compared with other countries. Canada ranks second among 39 countries in percentage of citizens that have visited a science and technology museum or centre at least once in the previous year. To support and inspire this engaged population, the NMST must continue to make STEAM inclusive to all demographics, to support lifelong science learning, and to create new opportunities fostering a STEAM culture across Canada.

With the future of Canada's STEAM innovations in the hands of today's youth, inspiring them and engaging them in meaningful experiences is increasingly important. The *Spotlight on Science Learning Report* completed in 2014 shows that interest in STEAM among teenagers in Canada is on the rise, with 72% saying that science is fun (compared to 34% in 2010). However, there continues to be a disconnect between the large number of teenagers who understand the importance of STEAM, and the small number who express an interest in pursuing STEAM careers. The NMST will continue to create opportunities to highlight STEAM careers, innovations, and inspiration with this key audience.

## 3.2 Risks and Mitigation Strategies

On an annual basis the NMST conducts a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) to identify and assess the organizational-level risks to the NMST achieving its objectives, and identify strategies to effectively and proactively address the risks to the degree possible. A risk quadrant is developed with the SWOT analysis results to determine the impact and likelihood of each risk. The following three risks were identified as those that ranked highest in terms of impact and/or likelihood.

**Risk:** *Endangering the national collection in storage due to inappropriate housing conditions.*

The NMST is responsible for an extensive collection of scientific and technological artefacts and materials. The collection is housed in three leased warehouse buildings, which are at 130% capacity, providing a challenge for the acquisition of new artefacts to enhance the collection. Moreover, the non-purpose built buildings have inadequate temperature and humidity controls, making them inappropriate to preserve Canada's material history, resulting in accelerated artefact deterioration. The situation has worsened since the Office of the Auditor General's (OAG) 2004 and 2009 Special Examination reports and an independent survey by Lundholm Associates Architects in 2002 raised the issue of the poor storage conditions.

**Mitigation:** Efforts to resolve accommodation issues for the national collection are a priority for the NMST. The Corporation continues to investigate fiscally responsible options for a collection reserve storage facility. Options being explored include public-private collaborations and subletting space to generating revenues. In the interim, the NMST continues to progress with the Collection Rationalization Project (CRP) to manage its collection and find efficiencies. While the main purpose of the CRP has been to improve the national collection and make artefacts accessible for display and research, a by-product of this ongoing project also identifies objects that are duplicates, damaged beyond repair, hazardous or simply not relevant to the NMST national collection mandate. In doing so, the Corporation is on track to recuperate approximately 1,780 square meters of storage space in 2014–2015. Any artefacts still in excellent condition are offered to a variety of heritage and educational organizations across Canada.

**Risk:** *The risk that the NMST will incur cost overruns for the major capital infrastructure project.*

The NMST will experience a decrease in projected revenues during closure. Moreover, the Corporation's limited budget does not allow it to absorb any cost overruns for the capital project.

**Mitigation:** The NMST has put in place a highly qualified team of professionals to deliver the CSTM infrastructure project, including members of the Executive Leadership Team. A specialized Project Manager will oversee each project team created for each component, to ensure rigorous adherence to the schedule and budget. The NMST also included budget contingencies of 10 to 20% at the design phase, construction phase as well as an overall project contingency. The Board of Trustees created a Building Committee in December 2014 that will receive regular progress updates on the schedule and budget of the project. This will provide an added governance layer of oversight to ensure adherence to the allotted budget.

**Risk:** *The widening gap between operating costs and funding and revenues, and the resulting loss of relevance due to limited capacity to invest in programming and exhibitions.*

The NMST's appropriations are not indexed to protect it against the impact of inflation on utilities, property taxes and other fixed costs. With each passing year, this represents a greater financial challenge as the costs rise but base appropriations do not. The Corporation uses an increasing portion of its funding to pay for the cost of operating its public facilities, collection storage and office spaces, as well as fund the salary envelop. In order to balance, the NMST makes reductions in program offerings and services, which impact its effectiveness in delivering on its mandate. Freezes on funding for incremental salary increases further diminishes available operating funds. Due to the multiple operating cost pressures the NMST is facing, and its reduced capacity to generate revenues due to the CSTM's closure, there is a risk of incurring operating losses in 2015–2016 and the two following fiscal years should there be a sudden significant increase in operating costs, such as PILT or lease payments.

**Mitigation:** The NMST will continue to inform the Government of Canada of its financial pressures that challenge its ability to ensure its financial sustainability. The Corporation is also committed to finding more diverse revenue generating opportunities and increase its efforts to find funding for new programming costs. The NMST has a number of cost containment measures in place.

## 3.3 Highlights and Challenges from 2014–2015

### 3.3.1 Highlights

As the NMST reflects on the mid-year results of 2014–2015, several successes have already been achieved. They include:

- **Ace Academy Mobile Application:** The NMST's first-ever mobile app was launched in November, achieving more than 13,000 downloads across 144 countries. Within its first eight weeks of launching, the *Ace Academy* app climbed to the third most popular in education apps download worldwide in the iTunes store and Google Play. This app was one component of the CASM's First World War Commemoration activities. Designed to enhance the museum experience, the app is available to mobile device anywhere. This experience has set the stage for moving forward with digitization at the NMST.
- **Open Data:** The NMST became the first national museum in Canada to join the Open Data movement. Canadians from coast-to-coast-to-coast can now access 43,220 objects using a new app developed with the museums' Open Data. The *Museum Catalogues Explorer* app was created at no cost by a third party only a few months after the NMST made its objects and photos accessible via Open Data. The Corporation participated in the Government of Canada Open Data "app-athon" where participants were encouraged to mash-up federal datasets like the NMST's to

build new apps. This product represents a new way of engaging with Canadians outside of the four walls of a museum.

- **Healthy Kids Quest:** Through teacher-led classroom activities, this online education program, currently downloaded more than 4,500 times, encourages healthy eating and physical activity for students in grades 1 to 3. The program, presented by Nestlé, is supported by the Government of Canada.
- **Facilities:** The Government of Canada's \$80.5 million investment to repair and modernize the infrastructure of Canada Science and Technology Museum over four years provides the opportunity for the NMST to refresh the exhibitions presented at the museum.
- **Exhibitions:** The NMST partnered with Library and Archives Canada to present the **Echoes in the Ice: Finding Franklin's Ship** exhibition. The NMST moved quickly to ensure that the timing of this display coincided with the recent September 2014 discovery of the Franklin Expedition shipwreck, *HMS Erebus*.
- **Google Cultural Institute:** This online Google platform is dedicated to sharing the cultural history of hundreds of museums across the globe. The NMST is the first Canadian national museum to partner with Google Cultural Institute to share its collection online, making it accessible to everyone.
- **Partnership with Canadian Nuclear Laboratories:** A series of seven educational videos on the topic of nuclear science and technologies have been released online in both official languages. The videos were produced collaboratively by Canadian Nuclear Laboratories and the CSTM.

### 3.3.2 Challenges and Lessons Learned

The NMST has faced a number of challenges throughout 2014–2015; it has learned key lessons and made adjustments in its plans to meet these challenges as follows:

- **Bugs and Beverages Event:** This adult-oriented evening event to be held at CAFM was intended to complement the museum's Bug Day programming. The event was cancelled due to low registration because the museum lacked information about this new target audience and setting an appropriate price point for such an event.
- **Crowdfunding Legacy Project:** This alternative funding pilot project, which attempted to raise \$30,000 through an online donation campaign, raised only \$20,000. Future crowdfunding projects will benefit from engaging partners earlier in the campaign to ensure monetary goals are met.
- **Digitization of the Collection:** Hindered by lack of resources, the digital collection plan continues to advance at a slow pace. The NMST continues to explore creative ways to move the project forward with its current assets, focussing on the 2D image collection.

## 4.0 STRATEGIC OBJECTIVES

### 4.1 The Planning Process

Over the 2014–2015 fiscal year, the last year of the planning cycle, the NMST began working on charting a new course for the 2015–2016 to 2019–2020 planning cycle. The new strategic framework was developed through several consultative processes at all levels of the organization. The final framework was presented to the staff in September 2014 and became the basis for work planning moving forward. The CMSTC Board of Trustees approved this Corporate Plan (2015–2016 to 2019–2020) in January 2015.

### 4.2 Program Alignment Architecture and Strategic Objectives

The Program Alignment Architecture (PAA) is a framework describing the NMST’s programs that are designed to achieve overall strategic outcomes. The Corporation establishes plans and priorities and receives parliamentary appropriations according to the PAA.

Using the PAA framework, the NMST has established five new Strategic Objectives for the planning period of 2015–2016 to 2019–2020, which serve as goals for its programs. Table 1 presents the four Strategic Objectives and their outcomes, aligned with the PAA framework.

**Table 1**

**Strategic Objectives According to the Program Alignment Architecture**

PROGRAMS	STRATEGIC OBJECTIVES AND OUTCOMES	
<p><b>Sharing Knowledge</b></p> <p>Interpretation of the collection and demonstration of scientific and technological products and processes to Canadians.</p>	<p><b>Strategic Objective: Best in Class – Education and Exhibitions</b></p> <p><u>Outcome:</u> The NMST delivered programs, products and services that tell the stories of Canadian ingenuity and innovation.</p>	<p><b>Strategic Objective: National Reach</b></p> <p><u>Outcome:</u> The NMST developed and created products that reached, connected and engaged with new and existing audiences outside the museums.</p>
<p><b>Heritage Preservation</b></p> <p>Corporate activities dedicated to developing and preserving the collection.</p>	<p><b>Strategic Objective: Best in Class – Collection</b></p> <p><u>Outcome:</u> The NMST has a well-researched, preserved, comprehensive and rationalized collection that is accessible virtually and physically to all Canadians.</p>	

<p><b>Internal Services</b></p> <p><b>Stewardship and management of corporate infrastructure, resources and services.</b></p>	<p><b>Strategic Objective: Sustainable and Profitable</b></p> <p><u>Outcome:</u> The NMST is a profitable, innovative, well organized, and financially viable organization.</p>
<p><b>Accommodations</b></p> <p><b>The physical environment required to house, protect and display the collection; the public facilities where hundreds of thousands of onsite visitors are welcomed each year; and office and administration space for staff.</b></p>	<p><b>Strategic Objective: Renewed and Innovative Infrastructure</b></p> <p><u>Outcome:</u> The NMST has three museum campuses that are recognized by Canadians and international audiences as destinations of choice in the Canada’s Capital Region.</p>

### 4.3 Strategies and Activities

For each Strategic Objective, the NMST has identified strategies, activities, performance indicators and measures for 2015–2016, as well as activities for the subsequent four years of the planning period. The Corporation will present an assessment of its performance in the corresponding annual report that will be prepared following each fiscal year.

#### 4.3.1 Best in Class – Collection

The NMST will pursue three strategies under this Strategic Objective:

1. make the collection more accessible digitally and physically;
2. become leader in science and technology subject based research by focussing and sharing expertise; and
3. advance the Collection Rationalization Project (CRP).

Planned activities for 2015–2016 to support these objectives include:

- continuing to rationalize and digitize the collection;
- implementing a subject area research plan which aligns with corporate priorities;
- developing virtual collection tours; and
- using the collection to attract new national and international partners.

For the NMST to consider itself “Best in Class” for collection it aims to continue to develop a renowned and accessible national collection. Praised as a model of rigour and efficiency by a number of international museological institutions, the NMST’s Collection Rationalization Project (CRP) continues to direct how it approaches the development of its collection.

The CRP consists of historical research which produces two types of assessments: first, Historical Assessments (HAs) that identify and analyze concepts, ideas and objects that are essential in the development of each main subject area; and second, Collection Assessments (CAs), which compare the profile of the existing collection with an ideal collection. This understanding of each section of the collection informs recommendations for acquisitions as well as deaccessions. Deaccessioning has become an important priority for the development of the collection. With the collection reserve space at 130% capacity, deaccessioning is the main solution to gaining the space needed to acquire important artefacts to complete the collection and better tell the story of Canada and its scientific and technological heritage. The CRP also updates the inventory of artefacts and could aid in the preparation of a move to a new purpose built collection reserve facility.

As the NMST continues to develop the digitization of the collection, the Corporation is exploring 3D scanning of iconic artefacts as well as the use of 3D printers. Many artefacts in the national science and technology collection have the potential of being excellent learning tools for educational programming. While the manipulation of them is not possible by visitors and students, a working 3D model of the artefact would give them the opportunity to fully understand the mechanics and technology behind the innovation.

The Collection, Research and Conservation Division has begun the process of evaluating areas of study with the goal of streamlining future collecting and becoming leaders in the field of subject-based research. This shift will put an emphasis on NMST's collection theme of the transformation of Canada into the 21st century, ensure that the collection remains relevant to today's citizens, and will help the NMST to fulfill its mandate. The new research plan will also provide more flexibility and encourage multi-disciplinary research projects.

The frequency of connecting regularly one-on-one to national audiences to share expertise will increase through the use of Skype or other similar platforms. This activity will play into the national outreach strategy and help to position the NMST as an expert in the eyes of universities, colleges and other collaborating institutions in the field.

The Collection, Research and Conservation teams will be heavily involved in the CSTM modernization. They will be part of the project team that will determine the overall Master Concept Plan and then follow through with developing the thematics and working with the exhibition development teams.

<b>Strategic Objective: Best in Class – Collection</b>		<b>Outcome: The NMST has a well-researched, preserved, comprehensive and rationalized collection accessible virtually and physically to all Canadians.</b>		
Strategy 1: Make the collection more accessible digitally and physically.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Continue to digitize the collection.				
Develop, promote and deliver virtual collection tours.				
Evaluate virtual collection tours.				
Revise and continue to deliver virtual collection tours.				
Strategy 2: Become leaders in science and technology subject-based research by focusing on and sharing expertise.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Implement a subject-based research plan.				
Revise the subject-based research plan.				
Implement revisions to the plan.				
Begin to use the collection to attract new national and international partners.				
Strategy 3: Advance the Collection Rationalization Project.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Continue to rationalize the collection.				

<b>PERFORMANCE MEASURES AND INDICATORS</b>	
<b>Measures or milestones</b>	<b>Targets 2015–2016</b>
- Percentage of collection digitized - Number of square metres cleared by removing un-catalogued objects from the collection reserve	- Previous year's results - 5,000 sq. ft.

#### 4.3.2 Best in Class – Education and Exhibitions

The NMST will pursue three strategies under this Strategic Objective:

1. create unique exhibitions that are relevant, engaging and entertaining experiences;
2. offer STEAM educational programming in formal and informal forums; and
3. celebrate significant and inspiring Canadian science and technology innovations.

Planned activities for 2015–2016 to support these objectives include:

- developing new exhibitions at CAFM and CASM;
- modernizing the CSTM exhibition space;
- developing celebrations for Canada’s 150th anniversary; and
- implementing a national learning strategy.

To be “Best in Class” for education and exhibitions, the NMST will challenge itself to continue to create informative, engaging, relevant and compelling physical and digital educational programs and exhibitions. The NMST will continue to support the lifelong learning of Canadians in STEAM through engaging and immersive educational programs. School programs at the museums will continue to offer teachers curriculum-connected content that will engage students in hands-on STEAM and immerse them in Canadian history. On-site programming will offer experiences for visitors to promote curiosity and critical and innovative thinking. At the CAFM, all visitors are encouraged to use their five senses as they experience a demonstration working farm in the nation’s capital. Visitors to the CASM engage in a lively interactive experience with aircraft and aerospace objects in an inspiring venue alongside an active airport. During the CSTM’s closure the educational programs team will be exploring different ways to dynamically demonstrate Canada’s transformation through scientific and technological achievement. This will allow visitors to experience real artefacts and engaging interactive displays. This could be with in-school programming or providing active programming at various events and festivals around the country.

The NMST continues to be a leader in bringing together a vast array of government, industry and academic organizations to discuss and plan for Canada’s 150th anniversary. The theme the Corporation has developed for its activities is “Canada’s Spirit of Innovation”. In the early stages of development the main project component will be a comprehensive digital platform that showcases the people, places and things that have contribute to Canadian innovation over the past 150 years since Confederation. The website will help the NMST and its partners to commemorate and explore past accomplishments, expose current breakthroughs and imagine future discoveries.

The NMST has already secured the website [www.InnovationCanada150.ca](http://www.InnovationCanada150.ca) which has had a soft launch in April 2015. A variety of engagement activities, primarily executed through different social media platforms, will reach, connect and engage with target audiences to help grow the content and build momentum to 2017. The NMST will be seeking sponsorships and collaborations to be able to completely fulfill this project.

During the CSTM closure, the NMST will continue to rejuvenate and create new exhibitions and programming relevant to today’s audiences for the CAFM and CASM to ensure visitor

satisfaction and encourage return visits. The NMST will explore the potential of hosting a blockbuster exhibition in 2016 at CASM. At current funding levels, however, new exhibitions and programming are limited and sponsors and collaborators will be required.

The modernization of the CSTM exhibition space will allow for new, dynamic and immersive exhibition techniques. The exhibitions will focus on telling the stories of Canadian ingenuity and inventions and their impacts on Canadians’ daily lives. The first step in achieving this is the development of the Master Concept Plan. This plan will describe the rejuvenated and modernised exhibitions, their look, feel and the overall visitor experience and the many adjacent spaces for the museum to deliver on its mandate. Summative and formative evaluations during the development of the new and modernised exhibitions will ensure the NMST meets its own and industry established standards for exhibitions and visitor satisfaction.

<b>Strategic Objective: Best in Class – Education and Exhibitions</b>		<b>Outcome: The NMST delivered programs, products and services that tell the stories of Canadian ingenuity and innovation.</b>		
Strategy 1: Create unique exhibitions that are relevant, engaging and entertaining experiences.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Launch <b>Life in Orbit: The International Space Station</b> exhibition.				
	Launch gaming exhibition.			
		Launch Canada 150 exhibition.		
			Launch mining exhibition.	
				Launch tech world exhibition.
Investigate potential for a blockbuster exhibition for 2016 at CASM.				
Develop a Master Concept Plan for the modernized CSTM.				
	Develop and begin installation of new exhibitions at CSTM.			
		Reopen CSMT.		

Strategy 2: Offer STEAM educational programming in formal and informal forums.				
2015–2016	2016–2017	2017–2018	2018–2019	2019–2020
Implement a national learning strategy.				
Deliver new STEAM educational programs.				
Develop a series of educational programs for families through Google Hangout.				
Deliver the Google Hangout educational series.				
Evaluate and adjust if necessary the Google Hangout educational series.				
Develop a business plan for selling summer camp packages to third party conveners.				
Strategy 3: Celebrate significant and inspiring Canadian science and technology innovations.				
2015–2016	2016–2017	2017–2018	2018–2019	2019–2020
Continue to induct new inductees to the Canadian Science and Engineering Hall of Fame.				
Launch InnovationCanada150.ca website.				
Celebrate Canada’s 150th and CSTM’s 50th anniversary.				
Continue celebrations.				

PERFORMANCE MEASURES AND INDICATORS	
Measures or milestones	Targets 2015–2016
- Attendance CAFM and CASM	- CAFM: 181,000
- Number of downloads of educational materials	- CASM: 182,000 - 50,000 downloads
- Percentage of visitor and user satisfaction	- 90% visitor and user satisfaction
- Number of school programs delivered / number of participants	- New baseline due to CSTM closure

### 4.3.3 National Reach

The NMST will pursue three strategies under this Strategic Objective:

1. build a creative and relevant line of outreach products;
2. build and sustain strong regional, national and international networks; and
3. increase awareness with new marketing and branding strategies.

Planned activities for 2015–2016 to support these objectives include:

- building new outreach pipelines;
- continuing to contribute content to the Open Data platforms;
- delivering national programs for Let’s Talk Energy and explore new national programs around gaming, mining, space exploration and food preservation;
- building brand awareness;
- developing new mobile applications and gamification; and
- formalizing distance learning.

To effectively increase national presence and outreach, the NMST and the CSTM, CASM and CAFM must maximize their national recognition as trusted authorities and leaders in their field. They must find alternative ways to communicate more narratives, to reach broader audiences and to engage in national story telling. To pursue these objectives, the NMST will provide more digital programs, such as distance education via Skype and other similar platforms; this will increase national presence and knowledge of the collection. New and existing distance connections will be formalized, to increase the regularity of the connections, reach new audiences and ensure the programs are impactful to the community. Delivering programming on a digital platform has an excellent reach, especially for small remote communities. Building on the success of the *Ace Academy* app from the CASM, the Corporation will collaborate with a developer to develop three more apps on themes of aviation and agriculture.

During the CSTM closure until 2017, the Corporation will increase its national outreach programming. It will continue to develop, create and produce products that reach, connect and engage with new and existing audiences outside of the museums. Building on previous successes, the NMST will continue to offer the Summer Institute for Elementary Teachers (SIET) program, increasing its scope and reach to include a number of workshops across the country throughout the year. New networks and innovative partnerships will continue to be built and fostered to support national outreach initiatives. The NMST’s Let’s Talk Energy pan-Canadian initiative will continue to work with other science institutions as well as government departments and agencies at all levels to continue the dialogue to

improve energy literacy across the country. New national programs on gaming, mining, space exploration and food preservation will also be explored. Efforts to bring the science and technology national collection to Canadians from coast to coast to coast will increase, including a more rigorous travelling exhibition schedule and artefact loan program.

An important part of broadening the reach of the NMST is to increase its brand awareness. The Corporation has already taken steps in this direction with being the first Canadian national museum to join the Google Cultural Institute. In 2015–2016 the NMST brand will be further marketed through collaborations with collaborators such as TSN and ComicCon. A pilot project to have Canadian comedians do short “bits” on artefacts in the collection for a YouTube series will also be launched.

<b>Strategic Objective: National Reach</b>		<b>Outcome: The NMST created products that reached, connected, and engaged with new and existing audiences outside the museums.</b>		
Strategy 1: Build a creative and relevant line of outreach products.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Formalize distance learning and the digital classroom.				
Establish audiences and deliver distance learning programming.				
Continue to contribute to Open Data.				
Enhance artefact loan program.				
Promote and coordinate artefact loans across Canada.				
Develop collaborations to create travelling exhibition products.				
Produce, promote and coordinate itineraries for new travelling exhibition products.				
Develop new mobile applications and explore gamification for the CSTM renewal.				
Launch new mobile applications.				
Strategy 2: Build and sustain strong regional, national and international networks.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Build outreach pipelines and networks (academia, industry, culture and heritage, science centers, informal learning organizations, etc.).				
Contribute, enrich and manage pipelines and networks.				

**Strategy 3: Increase awareness with new marketing and branding strategies.**

**2015–2016      2016–2017      2017–2018      2018–2019      2019–2020**

Develop new marketing and branding strategies.

Implement new marketing and branding strategies.

Pilot the “Hilarious Histories” video project.

Continue developing the “Hilarious Histories” videos.

Review and adjust if required the “Hilarious Histories” videos.

Develop projects to populate Google Cultural Institute.

Review impact of Google Cultural Institute membership.

**PERFORMANCE MEASURES AND INDICATORS**

<b>Measures or milestones</b>	<b>Targets 2015–2016</b>
- Number of virtual engagements (web, social media, etc.)	- Previous year’s results
- Attendance for travelling products	- Previous year’s results
- Number of school that used the Edukits	- Baseline

**4.3.4 Sustainable and Profitable**

The NMST will pursue three strategies under this Strategic Objective:

1. develop a sound business model that is diversified and maximises commercial returns;
2. leverage the government’s Innovation Agenda with partners and sponsors; and
3. invest in its workforce and workplace.

Planned activities for 2015–2016 to support these objectives include:

- implementing CSTM, CASM and CAFM business plans;
- growing business development; and
- strengthening the workforce.

For the first time the CSTM, CASM and CAFM have developed their own business operation plans and vision that align with the NMST’s mandate, vision and priorities and seek



sponsors.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Devise plan on how best to work with International Science and Technology Partnerships Program (ISTPP).				
Establish relationships with targeted ISTPP countries.				
Develop collaborations with academia, industry and government to showcase cutting-edge innovations at the CSTM, CASM and CAFM.				
Strategy 3: Invest in our workforce and workplace.				
<b>2015–2016</b>	<b>2016–2017</b>	<b>2017–2018</b>	<b>2018–2019</b>	<b>2019–2020</b>
Attract and develop new and required skill sets in the workforce.				
Continue to strengthen and engage in the workforce.				
<b>PERFORMANCE MEASURES AND INDICATORS</b>				
<b>Measures or milestones</b>		<b>Targets 2015–2016</b>		
<ul style="list-style-type: none"> <li>- Amount of operating revenue generated</li> <li>- Amount of contributions from donations, sponsorships and in-kind</li> <li>- Number of training hours for staff</li> </ul>		<ul style="list-style-type: none"> <li>- \$3.12 million in revenue generation</li> <li>- \$1.6 million in in-kind contributions</li> <li>- Previous year's results</li> </ul>		

#### 4.3.5 Renewed and Innovative Infrastructure

The NMST will pursue four strategies under this Strategic Objective:

1. launch the renewed CSTM;
2. address the need for a conservation and restoration facility for the aviation collection;
3. launch a capital campaign for a food security and nutrition centre at CAFM; and
4. pursue the development of a purpose-built building for the storage and preservation of the national collection.

Planned activities for 2015–2016 to support these objectives include:

- completing the planning phase and begin work on the CSTM infrastructure renewal;
- beginning site studies for the purpose-built collection reserve facility;

- securing funding and begin functional programming for a food security and nutrition centre at CAFM; and
- completing a business case for an aviation training and research centre at CASM to provide space for conservation and restoration work on the aviation collection.

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 onsite visitors are welcomed each year; and office and administration space for staff. The NMST will create nationally recognized destinations for all Canadians, enriching the collection and its reputation and demonstrating responsible fiscal management.

The Corporation will undertake a large capital project to resolve infrastructure issues at CSTM. In November 2014, the Government announced that it would provide infrastructure funding to replace the roof and reinforce the walls and fire-suppression system to withstand seismic disturbances. Included in the announcement was funding to modernize the exterior façade and renovate the interior exhibition space of the museum for a planned re-opening in 2017. (See Section 5.3.3 Major Capital Projects.)

The Corporation requires a space to conserve and restore large-scale aviation artefacts at CASM. Such a facility was included in the site plan developed for CASM, however, no source of funds has been identified. The Corporation will complete the development of a business case for the construction of a prefabricated fabric and steel hangar that would provide some technical/laboratory space to serve its immediate needs as well as those of the industry.

The hangar would serve as a temporary solution until funding to build a permanent aviation conservation and restoration facility is identified, which the Corporation will pursue in the long-term.

As the CAFM explores new frontiers and diversifies its audiences with the new Learning Centre, it continues to look to the future. To complete the final phase of the Master Site Plan, the CAFM will begin raising awareness and financial support for a food security and nutrition centre. This space will not only provide revenue-generating opportunities such as facility rentals, gift shop and food services, it will also be a place where the national collection serves as an inspiring backdrop for national discussions on food literacy, food security and food policy.

The current artefact storage consists of three leased, industrial-grade buildings not deemed suitable for the proper preservation of the NMST's collection. The limited space has resulted in the buildings being at 130% capacity. The Corporation has completed a functional program to handle current collection needs and to accommodate an additional 25 years of

growth. The NMST will continue to explore the options for a purpose-built building for the collection reserve, including the option for a purpose-built collection storage facility, as well as the option that would leverage private sector investments and existing relationships with other heritage and research institutions. The Corporation will continue to conduct consultations with government representatives to ensure that all options are being considered and processes remain transparent.

<b>Strategic Objective: Renewed and Innovative Infrastructure</b>		<b>Outcome: The NMST has three museum campuses that are recognized by Canadian and international audiences as destinations of choice in the Canada's Capital Region.</b>		
Strategy 1: Launch the renewed CSTM.				
<b>2015-2016</b>	<b>2016-2017</b>	<b>2017-2018</b>	<b>2018-2019</b>	<b>2019-2020</b>
Complete mold remediation and begin roof replacement and seismic retrofit.				
Complete roof replacement and seismic retrofit.				
Complete façade modernization and reopen CMST.				
Strategy 2: Address the need for a conservation and restoration facility for the aviation collection.				
<b>2015-2016</b>	<b>2016-2017</b>	<b>2017-2018</b>	<b>2018-2019</b>	<b>2019-2020</b>
Develop a business case for an aviation training and research centre.				
Identify sources of funding to build the hangar for the centre.				
Build the hangar and open the new centre.				
Strategy 3: Launch a capital campaign for a food security and nutrition centre at CAFM.				
<b>2015-2016</b>	<b>2016-2017</b>	<b>2017-2018</b>	<b>2018-2019</b>	<b>2019-2020</b>
Launch a capital campaign for a food security and nutrition center.				
Develop a functional program.				
Develop and design the centre.				
Construct the centre.				
Open the centre.				

Strategy 4: Pursue the development of a purpose-built building for the storage and preservation of the national collection.

**2015–2016      2016–2017      2017–2018      2018–2019      2019–2020**

Carry out studies and consultations for the development of a purpose-built collection reserve facility.

Launch a capital campaign and design competition.

Secure funding, plan and design of the site and building.

Begin construction for delivery in 2021.

**PERFORMANCE MEASURES AND INDICATORS**

**Measures or milestones**

- Meet project milestones for the CSTM modernization
- Successfully launch the capital campaign for the FNSC
- Develop a business case for ATRC
- Explore options for collection reserve facility

**Indicators 2015–2016**

- Milestones met
- Capital campaign launched
- Business case complete
- Options identified for collection reserve facility

## 5.0 FINANCIAL DISCUSSION

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### 5.1 Operating Budget

#### 5.1.1 Operating Budget Overview

In 2015–2016, the Corporation will receive an annual base parliamentary appropriation of \$26.865 million on a cash basis: \$26.065 million for operating and \$800,000 for capital. In addition, the Corporation will receive temporary operating funding of \$2.890 million to pursue implementation of the mold remediation and stabilization plan at the CSTM. The Corporation anticipates supplementing this funding with revenues of \$4.810 million in 2015–2016. Inclusive of projected revenues, the total operating budget will be \$34.2 million.

Due to the temporary closure of the CSTM, the Corporation is forecasting reduced revenues compared to recent years, until the museum's reopening in 2017. The Corporation yielded a surplus of \$883,000 for the year 2014–2015 due to the savings as a result of the closure of the CSTM as major capital projects planned for the fiscal year were put on hold. A deficit of \$445,000 is expected for 2015–2016, which will be covered through the use of its unrestricted assets.

Due to the current fiscal situation, the Corporation has little to no margin to absorb unforeseen costs. It will continue to pursue the following strategies to minimize the impact of the CSTM's closure on the budget for 2015–2016:

- find operational efficiencies;
- maintain reduced levels of travel and hospitality expenses;
- evaluate relevancy of existing programs and reduce or reallocate funds as appropriate;
- increase sponsorship and philanthropic opportunities and commercial operations; and
- provide data that will inform the Government of Canada about its financial pressures that affect its ability to achieve financial sustainability.

In addition to the above-stated strategies and in order to respond to financial pressures, over the years the Corporation has implemented and continues to pursue an array of cost-reduction measures, including:

- applying a moratorium on new exhibition development unless funded by sponsorships or a return on investment is guaranteed;
- stretching the use of equipment beyond its expected duration;
- restraining discretionary spending;

- pursuing energy efficiency programs;
- reducing staff; and
- scaling back programs, services and activities offered to the public.

## 5.1.2 Operating Pressures and Trends (Financial Sustainability)

### Rising Operating Costs

#### *Inflation*

The Corporation's parliamentary appropriations are not adjusted to take into account the rising cost of operating its facilities or delivering programming, which increase at roughly the rate of inflation.

Lease payments, utilities, property taxes, payment in lieu of taxes (PILT), protection services and property management costs continue to increase based on market conditions and inflation, for which the Corporation does not receive adjustments on its appropriations. For example, the Corporation leases a number of buildings to house the national collection. As these buildings were not initially built for artefact storage and preservation the Corporation must continuously make tenant improvements to adapt the facilities to its needs. The Corporation is also subject to rent increases when leases are renewed. Renewal rates are based on fair market value taking into consideration factors such as vacancy rates, building type, and ease of access to transportation corridors for industrial warehousing. One lease will have to be renewed in 2015–2016; the NMST is expecting an increase in payments of up to \$150,000 a year.

As funding is not indexed, the NMST must find ways to absorb the increasing levels of expenses by reducing personnel, programs and services in order to balance its budget. The Corporation is exploring opportunities to broach a review of the funding levels for all national museums in order to fix this perpetual issue.

#### *Unfunded operations*

The impact of inflation on the Corporation's appropriations is compounded by the fact that its base appropriation level was not permanently increased despite having two new facilities to operate:

- In 1997, the CAFM became an affiliated museum of the Corporation, at an annual operating cost of \$3 million. While Agriculture and Agri-food Canada remains the custodian department for the site, the Corporation is responsible for the programming, capital and operating expenses of the site (excluding PILT).

- In 2005, the collection hangar at CASM opened with an annual operating cost of \$1.475 million. Temporary operating funds were provided on an ad hoc basis for the first four years of operations, and no permanent funding has ever been secured.

To balance its budget, the NMST has been required, therefore, to absorb the operating costs for these facilities by reducing spending in other programs and facilities.

### *Capital upkeep*

The condition of the Corporation's ageing capital assets requires increased annual capital investments. Given its limited base appropriations, repairs are made on an urgent, as needed basis, leading to deferred maintenance and/or increased repairs in the long term.

## 5.2 Financial Planning Assumptions and Projections for 2015–2016

### 5.2.1 Parliamentary Appropriations

The NMST parliamentary appropriations for the fiscal year 2015–2016 is \$59.110 million on a cash basis, comprised of the NMST's base appropriations of \$26.865 million and temporary additional funding of \$2.890 million in operating to implement the CSTM mold remediation and stabilization plan and \$29.355 million in capital for the infrastructure renewal project at the CSTM. On the basis of accrual accounting, the amount of \$32.252 million is being reported as parliamentary appropriations in the financial statements for fiscal year 2015–2016. Over the five-year planning period, it is assumed that the Corporation will continue to receive its existing base appropriations, an additional \$3.563 million in temporary operating funding over 2015–2016 to 2017–2018 for the Canada Science and Technology Museum mold remediation and stabilization plan and to commission substantive cost estimates for the roof replacement and seismic retrofit, as well as a one-time capital contribution of \$70.715 million over 2015–2016 to 2017–2018 to complete the roof replacement and seismic retrofit of the museum building and to modernize the exhibition space and exterior facade of the building.

This infrastructure renewal funding will fix the deteriorated roof condition that has plagued the CSTM for the past several years, bring the building into compliance with seismic building codes, as well as to modernize the entire exhibition space and exterior façade, creating a more relevant and engaging visitor experience, reflective of Canada's science and innovation past and future.

## 5.2.2 Revenue Projections

The Corporation expects to supplement the parliamentary appropriations through a number of funding sources including revenues, sponsorships, and philanthropic support. Total earned revenue from all sources for the Corporation was \$4.898 million for 2014–2015. While it aims to maximize revenues from all possible sources, the Corporation has adopted a conservative approach for establishing the projections, based on the revenues generated in recent years. After recording significant revenues in 2013–2014 due to the presentation of the **Star Wars™ Identities** exhibition at the CASM, revenues in 2014–2015 returned to their 2012–2013 level and are expected to remain stable in subsequent years. The Corporation has limited means to invest further in new revenue-generating opportunities. Due to the closure of the CSTM, the Corporation is projecting reduced revenues of approximately \$2.1 million for both 2015–2016 and 2016–2017, and revenues are not expected to return to their 2012–2013 level until 2018–2019.

### Attendance

Revenue projections are intrinsically linked to visitor attendance at the museums. Visitors typically pay admission and parking; they have the option of partaking in a thematic experience at an extra cost, purchasing food or beverage, and shopping in the boutique. The total visitors target for the budget year 2015–2016 is 383,000, taking into consideration the closure of the CSTM since September 2014 and based on the number of visitors at the other two museums over the recent years.

### Admissions, Memberships and Programming

#### *Admission revenue*

The estimated revenue from admissions for the budget year 2015–2016 is based on 383,000 expected total visitors; of which 308,000 are expected to be paying visitors, at an average admission price of \$5 per visitor. This is aligned with previous years' results at CAFM and CASM, with the exception of 2013–2014, which had a spike in visitors due to the **Star Wars™ Identities** exhibition. It also takes into consideration the closure of CSTM as of September 2014. While there is very limited room for price adjustment compared to similar experiences provided by other organizations at this time, the Corporation will continue to monitor demand for museum experiences and adjust admission prices accordingly to maximize revenues.

#### *Membership revenue*

Up until the closure of the CSTM, membership sales were on target to reach record levels. The closure will have a significant impact on membership revenue, attendance, and overall member satisfaction until the CSTM reopens in 2017. The revenue projection for 2015–2016 is \$220,000, an estimated 52% less, as a result of the closure. While still providing

excellent value for members at the CAFM and CASM, due to the closure of the CSTM members will be offered new programs, “members only” collections tours and invitation only events to help keep them engaged. A voucher system for an extension to memberships equal to the amount of months lost due to the closure is also being offered. Membership revenues are anticipated to decrease for the duration that the CSTM is closed. Once CSTM reopens the NMST will commence an aggressive marketing strategy to regain lapsed members and to gain new ones.

The Corporation’s approach is a tiered membership-sales strategy that provides different categories of memberships for families, seniors, students, major donors and others. Membership privileges include: unlimited admission to the CSTM, CASM and CAFM, discounts on regularly priced merchandise in the museums’ gift shops and cafeterias, early registration to summer camp programs, and invitations to exclusive members-only events and tours. As members receive unlimited admission to the museums, they are included in the attendance numbers above and are considered paying visitors for the calculation of admission revenue.

### *Education programming revenue*

Revenue is generated from fees charged to school groups for education programs. The Corporation’s museums carry out educational programs for school ages that range from kindergarten to grade 12, and generally host an average of 1,950 school groups per year, primarily from the Canada’s Capital Region and surrounding areas. Revenue is also generated from fees charged for summer camps. The Corporation’s camps are very popular and provide many unique experiences such as interactive gaming camps, cooking classes, scientific experiences and farm animal care. Taking into consideration the closure of the CSTM until 2017, the Corporation will not be in a position to sustain the level of revenues generated over the last few years. The projection for 2015–2016 of \$390,000 for total educational programming revenue assumes \$150,000 from school programs (26,000 students at an average fee of \$6 per student); and \$240,000 from summer camps at the museums (1,250 participants at an average of \$190 per week per camp). Revenues are expected to return to their 2012–2013 level in 2018–2019.

## Commercial Operations

### *Retail revenue*

The museums have boutiques on site (CASM and CSTM only) and online retail sites that sell books, toys and games, giftware, apparel, and other branded merchandise related to the subject matter and exhibitions of each museum. Due to the closure of the CSTM the Corporation anticipates a significant decrease in retail sales in 2015–2016 as compared to 2014–2015, for a total projected revenue of \$535,000. Data provided by the Museum Store

Association indicates an average spending of \$3.23 per museum visitor; in comparison, the retail sales experienced by the other national museums in Ottawa range from significantly lower to much higher. The Corporation's net retail revenue is slightly lower than the average due to limited physical retail space, limited marketing budget, and investments needed for improving the online boutique.

### *Parking revenue*

In May 2013, the Corporation implemented paid parking at the three museum sites, at a one-time cost of \$112,500. The maximum charge is \$6 per day, and visitors can re-use the parking receipt throughout the day at any of the Corporation's museums. The parking is monitored by a third-party company which is responsible for collecting parking fees and for the maintenance of the machines.

For fiscal year 2013–2014, the Corporation collected \$540,000 in parking revenues. This is higher than predicted due to the popularity of the **Star Wars™ Identities** exhibition at the CASM, which caused a surge in parking revenues.. Parking revenues for 2015–2016 and 2016–2017 will also be impacted by the CSTM closure and are projected to be around \$170,000 each year until the reopening of the museum in 2017.

### *Facility rentals revenue*

The calculation of facility rentals revenue uses a fee per event model plus a profit-sharing model with the cafeteria/catering services. It is assumed that the overall number of bookings for all rentable spaces in the Corporation's museums will grow from recent years, for a total of 130 events at an average revenue of \$2,000 each, yielding a projected revenue of \$265,000 in 2015–2016. Although the CSTM rental spaces are no longer available due to the closure, the recent renovations of the CASM lobby and the CAFM Learning Centre, thanks to funding received in Budget 2008, provide new rental spaces, in addition to existing event spaces at the CASM. As awareness of these new rental spaces grows, the projected facility rentals revenue in 2016–2017 to 2019–2020 assume an increase of 10 to 15 rentals per year for the next 5 years at each site.

### *Thematic experiences revenue*

Additional optional thematic experience will be offered at the CASM and CAFM sites in return for increased admission fees. The Corporation anticipates approximately 2,500 aircraft rides at the CASM for which it receives a commission for each ride sold. At the CAFM, on average, 15,000 visitors annually take a horse-drawn wagon ride through the Central Experimental Farm. These supplementary activities represent a constant source of revenue highly correlated to the museums' visitor attendance. With the closure of the CSTM, the additional revenues from the SIMEX space simulator thematic experience are lost. Across the

Corporation, thematic experience revenues therefore are expected to decrease and would potentially return to 2012–2013 levels once the CSTM reopens to the public in 2017 with the possibility of new thematic experiences.

### *Farm operations revenue*

The CAFM includes a demonstration working farm which generates revenues from milk production. Revenues from this activity should be comparable to forecasted revenues for 2014–2015 and remain constant for the planning period.

### *Other revenue*

An amount has been budgeted, normally on a cost-recovery basis, for revenues from travelling exhibitions, licensing and copyright. Possible increased revenues from these sources will be investigated further in future years.

## Sponsorships and Contributions

The sponsorship target for 2015–2016 is \$800,000, which is feasible given the successful initiatives and programs the Corporation has recently developed. Sponsorships showed continued success in 2014–2015 by securing significant funds for initiatives such as the exhibitions **Living in Orbit: The International Space Station** and **Food Preservation: The Science You Eat**, as well as for the Let's Talk Energy pan-Canadian initiative. The Corporation seeks to increase sponsorship and create long-term collaborations to enhance programs and deliver on its mandate. The NMST will focus on identifying opportunities to leverage collaborations with federal government departments and agencies, post-secondary and other academic institutions, as well as the private sector, by offering a public face to communicate their priorities and innovations in the areas of science, technology, engineering, art and mathematics (STEAM). As new programs can no longer be undertaken without funding from external collaborators, the tables in this Corporate Plan do not reflect significant new income for future initiatives; they reflect the anticipated receipt of funding from already existing products. The revenues and expenses of projects funded from new sponsorships will permit the NMST to advance projects showing corresponding income and expenses and will not affect the net income for the planning period. It should be noted that until CSTM reopens in 2017, it may be more difficult to attract new sponsors across the Corporation.

The Corporation anticipates a contribution of \$400,000 from the Foundation in 2015–2016, which is lower than in previous years as the CSTM site will be closed. The Corporation supports the Foundation's fundraising opportunities by providing venue space for special events and personnel to carry out fundraising activities. Beginning in 2015–2016 and under the leadership of a new Executive Director, the Foundation will focus its efforts on

annual appeals, fundraising events, and major donations. As a result, the Corporation expects that fundraising targets will increase over time.

Other contributions in this category include contributed support from employees from other government organizations for which the fair market value can be determined.

### Investment Revenues

The short-term cash balance is invested in low risk vehicles (i.e. GICs, Canadian Savings Bonds) with an expected yield of 1.5%, contributing \$90,000 in revenue. The decline in the cash balance to help fund the completion of the capital investments will have an impact on revenue. Timing of the availability of the capital infrastructure funding and of work completion of major capital projects will have an impact on cash balance, and consequently on investment revenue.

### 5.2.3 Planned Expenditures

Planned expenditures for 2015–2016 and subsequent years are taking into consideration the closure of the CSTM from September 2014 to 2017. However, projected expenditures for the planning period do not reflect the impact of salary economic increases. A new collective agreement was negotiated in 2014–2015 and expenditures will be adjusted accordingly to balance the budget. This could potentially lead to staff reductions in order to lessen the impact of salary economic increases and to stabilize personnel costs over the planning period.

The Corporation's expenditures are divided according to the four elements of the Program Alignment Architecture. The Corporation has established new strategic objectives for the 2015–2016 to 2019–2020 planning period, which serve as long-term objectives to guide the work of each program.

#### Heritage Preservation: \$4.300 million

##### *(Strategic Objective: Best in Class – Collection)*

Heritage Preservation includes all corporate activities dedicated to developing and preserving the collection, such as documenting, cataloguing, conserving artefacts, historical research, the library and related services. The NMST aims to enrich the collection and enhance its national and international reputation.

In doing so, work on collection documentation and basic preventive conservation measures will be undertaken. A focus on sharing the collection with museums across Canada will help to alleviate some overcapacity and the added storage pressure caused by the closure of

the CSTM. Borrowing institutions will be required to incur the associated costs—these amounts will be accounted for as agreements are brokered.

### Sharing Knowledge: \$11.165 million

*(Strategic Objectives: Best in Class – Education and Exhibitions and National Outreach)*

Sharing Knowledge includes all activities dedicated to the interpretation of the collection and the demonstration of scientific and technological processes to Canadians. The NMST aims to engage Canadians with the past, present and future of science, technology and society through rich and compelling experiences. It also aims to increase its outreach with a variety of stakeholders involved in science, technology and culture in all provinces and territories.

The main investment for these goals will be in programs to interpret the collection and the upkeep of current exhibitions at CASM and CAFM, as well as the implementation of the National Outreach Strategy. New exhibitions will continue to be dependent on collaborators. The Corporation will continue to make small changes to the CASM and CAFM and maintain the visitor base through enhanced visitor experiences. Initiatives such as Let's Talk Energy and **Food Preservation: The Science You Eat** will allow the Corporation to continue to work with institutions across the country to help promote science literacy. Sharing Knowledge expenses spiked in 2013–2014 due to the expenses related to the **Star Wars™ Identities** exhibition. For the fiscal year 2015–2016 and the two following fiscal years, Sharing Knowledge expenses are expected to decrease significantly due to the closure of the CSTM.

### Internal Services: \$6.755 million

*(Strategic Objective: Sustainable and Profitable)*

Internal Services comprises all support activities which involve the stewardship and management of corporate infrastructure, resources and services. The NMST aims to demonstrate responsible management and governance of financial and other resources, and to attract, develop, support and retain a highly skilled, dynamic workforce.

This area continues to be studied in an effort to minimize all operating costs. Investments in tools to streamline processes and gain longer term efficiencies such as new Human Resource management system and Digital Asset Management system will be the focus.

### Accommodation: \$15.190 million

*(Strategic Objective: Renewed and Innovative Infrastructure)*

Accommodations includes 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 onsite visitors are welcomed each year; and office and administration space for staff. The NMST will create nationally recognized destinations for all Canadians, enriching the collection and its reputation and demonstrating responsible fiscal management.

Ageing infrastructure among the Corporation's portfolio is causing increased repairs and maintenance costs. Inflationary costs of service providers and increases in utility costs are other sources adding to pressure in this spending area.

In 2015–2016, one significant lease is coming to term, for one of the buildings housing staff and collection reserve areas. While the Corporation is looking for options to reduce lease payments, including lease extensions and longer term leases, the estimated increase in rent payments could be as much as \$150,000 per year.

**Table 2****Statement of Operations – Accrual Basis**  
(in thousands of dollars)

	2014– 2015 Actual	2015– 2016 Forecast	2016– 2017 Budget	2017– 2018 Budget	2018– 2019 Budget	2019– 2020 Budget
<b>REVENUE</b>						
Admission						
Science and Technology	\$889	\$0	\$0	\$800	\$1,400	\$1,435
Aviation and Space	\$674	\$650	\$660	\$670	\$680	\$690
Agriculture and Food	\$717	\$620	\$630	\$640	\$650	\$660
Boutique Sales	\$682	\$535	\$575	\$800	\$1,100	\$1,150
Facility Rentals and Concessions	\$325	\$265	\$280	\$310	\$325	\$335
Parking	\$441	\$170	\$175	\$250	\$320	\$330
Membership	\$452	\$220	\$230	\$300	\$430	\$465
Farm Operations	\$358	\$315	\$325	\$340	\$350	\$355
Thematic Experiences	\$99	\$95	\$100	\$110	\$125	\$130
Other	\$261	\$250	\$250	\$250	\$250	\$250
	<b>\$4,898</b>	<b>\$3,120</b>	<b>\$3,225</b>	<b>\$4,470</b>	<b>\$5,630</b>	<b>\$5,800</b>
Contributions	\$1,979	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600
Interest	\$151	\$90	\$90	\$90	\$90	\$90
<b>Total Revenue</b>	<b>\$7,028</b>	<b>\$4,810</b>	<b>\$4,915</b>	<b>\$6,160</b>	<b>\$7,320</b>	<b>\$7,490</b>
<b>EXPENSES</b>						
Heritage Preservation	\$4,120	\$4,300	\$4,300	\$4,350	\$4,350	\$4,375
Sharing Knowledge	\$13,667	\$11,165	\$10,895	\$11,545	\$12,625	\$12,650
Support Activities	\$6,563	\$6,755	\$6,730	\$7,075	\$7,100	\$7,125
Accommodation	\$13,481	\$15,190	\$12,855	\$12,718	\$12,600	\$12,700
<b>Total Expenses</b>	<b>\$37,831</b>	<b>\$37,410</b>	<b>\$34,780</b>	<b>\$35,688</b>	<b>\$36,675</b>	<b>\$36,850</b>
Net Results of operations before government funding	\$30,803	\$32,700	\$29,865	\$29,528	\$29,355	\$29,360
Parliamentary Appropriation <sup>1</sup>	\$31,686	\$32,255	\$29,870	\$29,533	\$29,365	\$29,365
<b>Net earnings (Loss)<sup>2</sup></b>	<b>\$883</b>	<b>-\$445</b>	<b>\$5</b>	<b>\$5</b>	<b>\$10</b>	<b>\$5</b>

<sup>1</sup> Appropriation has been reported on an accrual basis, modified from our parliamentary vote as shown in Table 3.

<sup>2</sup> The loss recognized in 2014–2015 in the Statement of Operations is a result of the CSTM closure. The Corporation is using the accumulated unrestricted net assets as of the end of 2012–2013 to finance the operating shortfall in 2014–2015, and will do so again in 2015–2016.

**Table 3**  
**Parliamentary Appropriations – Accrual Basis**  
(in thousands of dollars)

	2013– 2014	2014– 2015	2015– 2016	2016– 2017	2017– 2018	2018– 2019	2019– 2020
<b>PARLIAMENTARY FUNDING</b>							
Base Appropriations for operating and capital	\$26,862	\$26,865	\$26,865	\$26,865	\$26,865	\$26,865	\$26,865
One time funding (Budget 2008 for CAFM)	\$141	\$0	\$0	\$0	\$0	\$0	\$0
Temporary funding for CSTM mold remediation and stabilization plan	\$0	\$6,279	\$2,890	\$505	\$168	\$0	\$0
One-time infrastructure investment for CSTM	\$0	\$0	\$29,355	\$32,610	\$8,750	\$0	\$0
Sub-Total Main Estimates	\$27,003	\$33,144	\$63,165	\$57,586	\$34,033	\$26,865	\$26,865
Deferred appropriations used in current year	\$1,813	\$32	\$5,090	\$0	\$0	\$0	\$0
Appropriations approved in current year for expenses and purchases of assets in future years	-	-5,090	-	-	-	-	-
Amount used to purchase capital assets	-\$2,259	-\$798	-\$35,245	-\$33,310	-\$9,450	-\$700	-\$700
Amortization of deferred capital funding	\$3,206	\$4,172	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200
Appropriations reported in Statements	\$29,763	\$31,686	\$32,255	\$29,870	\$29,533	\$29,365	\$29,365

### 5.3 Capital Budget

The Corporation will use a base capital funding of \$800,000 in 2015–2016, from the \$26.865 million received in appropriations. Due to budgetary pressures on the Operating Budget, the Corporation postponed some capital projects in 2014–2015 in order to focus funds on temporarily addressing urgent health and safety issues at the CSTM and to partially cover for reduced revenues related to the CSTM closure.

In addition, as of 2015–2016, the Corporation will embark on major infrastructure project on the CSTM with one-time capital investment from the Government of Canada totalling \$70.7 million over three years. The project will include a complete roof replacement, structural work to retrofit the perimeter walls and the fire-suppression system to withstand seismic disturbances, the modernization of the exhibition space, and a new exterior façade.

The Corporation will be looking at leveraging this funding with private sector organizations by providing a platform to display their technologies. The goal is to supplement the government funding by targeting technology companies and other suppliers to generate at least \$2 million in in-kind contributions over the next three years.

### 5.3.1 Five-Year Capital Plan

Over the next five years, the NMST will complete major capital infrastructure work at the CSTM, as explained in the section below. Other than the one-time infrastructure funding, the Corporation has minimal capital funds remaining, which will be invested in essential maintenance and urgent repairs that will extend the useful life of buildings for more than one year. The \$30.155 million Capital Budget for 2015–2016 is made up of two components: the one-time infrastructure renewal funding and on-going capital requirements. Table 12 provides the Corporation’s five-year long-term capital budget.

**Table 4**

**NMST Capital Budget by Museum and Corporate Assets**

	2014–2015 Budget	2014–2015 Actual	2015–2016 Budget	2016–2017 Projection	2017–2018 Projection	2018–2019 Projection	2019–2020 Projection
CSTM Infrastructure renewal project <sup>1</sup>	\$0	\$0	\$29,355,000	\$32,610,000	\$8,750,000	\$0	\$0
CSTM Scheduled Lifecycle repairs	\$0	\$0	\$0	\$25,000	\$25,000	\$25,000	\$25,000
CASM Scheduled Lifecycle repairs	\$175,000	\$55,000	\$150,000	\$25,000	\$25,000	\$25,000	\$25,000
CAFM Scheduled Lifecycle repairs	\$75,000	\$238,000	\$125,000	\$75,000	\$75,000	\$75,000	\$75,000
Corporate	\$300,000	\$432,000	\$400,000	\$450,000	\$450,000	\$450,000	\$450,000
Tenant Improvements	\$150,000	\$73,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000
<b>TOTAL</b>	<b>\$700,000</b>	<b>\$798,000</b>	<b>\$30,155,000</b>	<b>\$33,310,000</b>	<b>\$9,450,000</b>	<b>\$700,000</b>	<b>\$700,000</b>

### 5.3.2 Major Capital Projects

In fiscal year 2014–2015, the Government of Canada approved funding totally \$80.5 million for the NSTM to repair, renovate, and modernize the CSTM building. Of this funding,

\$9.8 million is being provided to implement the remediation and stabilization plan, as well as to seek substantive cost estimates for the roof replacement and seismic retrofit of the museum building. The entire project will require a temporary museum closure of up to 38 months with a reopening expected in 2017.

## CSTM Infrastructure Renewal

### Component 1

The first component consists of the remediation and stabilization, as well as the repair to the CSTM base building envelope.

The contracts for the project management firm and prime consultant were awarded in February 2015. Once the design and specifications are complete the best course of action for scheduling roof replacement and seismic retrofit will be determined.

After careful review and extensive discussions with the Project Management team, the Corporation has decided to change the tendering process from Design Build to Construction Management. This process includes having the General Contractor onboard at the beginning of the design process instead of at the end. By taking this approach, the General Contractor will have an opportunity to be part of the design team and provide their expert knowledge on constructability of the design elements.

The Construction Management process allows the Prime Consultant, with the help of the General Contractor, to develop the bid packages for the trades sequentially instead of all at the same time. This will significantly advance the trade schedule. The trades include all of the different sub-contractors that will be required to work on the project including demolition, mechanical, structural, electrical, etc. As part of the General Contractor's RFP submission, they will have named two or three specific companies they have pre-qualified for all of the trades and will work directly with those companies for costing the specific trade bid packages. Having the General Contractor involved in developing these bid packages adds the perspective of the constructor to the process which reduces the risk of extras and delay claims. This should result in lower total cost, allowing for earlier trade bidding and schedule advancement.

The CSTM infrastructure renewal project can benefit by this process as the sequential packages approach permits the work to begin on one package while the Prime Consultants prepares the next package. While this process takes a little more time on the front end, it will easily gain back the time during construction.

In 2016–2017 the new roof will be installed and the seismic work will be completed including upgrading the fire suppression system and repointing bricks.

## Component 2

The second component will consist of everything related to the exhibition space modernization which will include the interior renovations and fit-up, thematic framework development, design and fabrication of new and rejuvenated exhibitions and their installation inside the museum.

The process that the Corporation is undertaking follows standard recognized practices used when designing either a large facility or a major exhibition space. The steps follow a logical sequence and move from the general and the conceptual to the detailed and practical.

### *Master concept plan*

The RFP to select a firm that will assist the museum in developing a master concept plan which will include a visitor and program experience plan and a concept and implementation plan for all the public spaces has been launched on MERX and has been awarded in March 2015. The document, that the selected firm will create, will describe the rejuvenated and modernised exhibitions, their look and feel, the overall visitor experience and the many adjacent spaces needed for the museum to deliver on its mandate. The Master Concept Plan is expected to be completed by the end of June 2015. The firm will also remain on board during the entire design process to ensure the adherence to the design concept.

The CSTM has made some initial decisions concerning the Master Concept Plan which will be further fleshed out with the contracted firm. For instance, the Train Bay will remain but will be upgraded; the Crazy Kitchen will be recreated; a highly interactive space tentatively called the Children's Innovation Space will be created aimed at children from 2 to 11 years; a "Fab Lab" tinkering space for 13- to 17-year-olds is being considered as in an incubation space for testing future interactives or programs, accessible to academia to use as a live lab as well; and finally a 930 square-meter divisible flexible space for temporary and travelling exhibitions.

### *Consultations*

The CSMT has already begun consulting external stakeholders in the museum and science center field to glean information on best practices and lessons learned where undertaking similar large scale exhibition projects. A consultation plan has been developed which details when consultation will be sought out, on what subject and who will be consulted.

<b>Type</b>	<b>Involves</b>	<b>Value</b>
Member Consultations	Inviting members to review concrete elements of planned visitor experience, e.g. themes, improvements to services, keep/toss decisions.	Members have intimate and valuable knowledge on the CSTM visitor experience, including issues that could/should be corrected. Invitations to participate will also build and retain Members' engagement.
Open Consultations	Providing opportunities for anyone interested to contribute ideas, critiques, etc.  <u>Physical</u> : open house and/or displays of ideas with space for comments.  <u>Web</u> : open platforms (Hangouts, wiki).	Provide opportunities for anyone interested in the project to play a role in its development. A way to test ideas and concepts with people who are likely to be future visitors/content users.
Stakeholder interviews	Reaching out to organizations the Corporation currently (or aim to) works with. Interviews using pre-defined questions, recorded for content summaries.	Identifying the needs and expectations of special interest groups. Develop a pool of "go-to" people as questions arise.
Accessibility	Hiring external and independent consultants to monitor and recommend solutions to accessibility issues.	Qualified and independent assurance that the museum will meet the needs of Canadians with disabilities (physical and cognitive).
Student Consultations – may use the CSTMC Youth Advisory Committee	Working with students of different ages to bring their ideas and interests into the re-development. Interesting work has been done with younger children using drawing-based exercises.	Reflecting the interests of children and students in the exhibition and programming plans.

### *Design, fabrication and installation*

The Corporation will be using primarily external museum exhibition design experts to both design and build the exhibition. A RFP for a Senior Project Manager who will be responsible for the overall management of the project, including tracking of the many contracts and interacting with the Project Management firm responsible for Component 1 will be issued in early 2015–2016.

While the majority of the design and fabrication of the exhibitions will occur in 2016–2017, preliminary design concepts will begin in 2015–2016. In the summer of 2015, a number of RFPs will be issued to select the individual design-fabrication firms that will develop, design, fabricate and install the many elements of the rejuvenated and modernised exhibition space. The number of these RFPs will depend on the number of discrete elements identified through the Master Concept Plan.

Exhibition fabrication will be undertaken off-site starting in 2016–2017 while the repairs to the building are completed. Installation of the exhibitions in the museum will begin in late spring 2017 for the anticipated reopening in the fall of 2017.

#### *Base building and exhibition space fit-up*

The detailed base building and exhibition requirements will be identified in the design phase. Construction of the base building will begin once the roof replacement work is complete in 2016–2017 and will consist of the construction of new walls, flooring, painting, electricity, security, IT and other exhibition fit-ups.

#### *Sponsorships*

A sponsorship strategy has been developed. This strategy includes a list of potential sponsors and donors, aimed specifically at certain areas of the museum. The strategy also breaks down sponsorships into categories and clearly identifies packages and ranges of donations. The Sponsorship team has already identified a number of sponsors that have already shown interest in the Children’s Innovation Space.

### 5.3.3 Corporate-Wide Assets

Corporate assets are primarily operational and consist of equipment, including a fleet of eight vehicles, material handling equipment, information technology assets, furniture and fixtures. As the external environment points toward greater reliance on information, the Corporation is required to redirect some of its appropriation to this area. The Sharing Knowledge portion of its mandate has changed drastically as well, with external and internal clients expecting increased access to digital information and images. Data servers, bandwidth, firewalls and digital equipment have become a necessity, and will require increased resources. The NMST’s total asset value and investment over the last two years has focused these investments on operational efficiencies.

### 5.3.4 Unfunded Capital Requirements

There is a pressing need to address upgrades and site improvements in order to enhance the visitor experience and to ensure that the Corporation's capital infrastructure does not deteriorate or fail, which would impede on delivering its mandated activities. For instance, the Corporation has prepared long-term site plans for the CASM and CAFM. These plans have been approved by the NMST's Board of Trustees and the National Capital Commission. Should additional resources become available after budgetary pressures have been addressed, the Corporation would invest in the capital improvements listed in the table below (in order of priority).

**Table 5**

**Unfunded Capital Requirements and Required New Facilities**

**NMST Unfunded Capital Requirements**

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Finalise fit-up of new Learning Center at CAFM

Ventilation units and sanitation upgrade to Building 2380 (CSTM)

Heating and cooling equipment replacement at Building 2495 (CSTM)

Fire suppression and stand-by power for Buildings 94 and 95 (CAFM)

Civil work at the CAFM to enhance visitor access

New IT devices to use on the floor of the museums to enhance visitor experience, such as news and augmented reality applications

Mechanical upgrades for Building 2421 (CSTM)

Link between the museum and the hangar at CASM

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**NMST Required New Facilities**

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New Collection Storage Facility

New food security and nutrition centre (CAFM)

New aviation training and research centre

New Conservation and Restoration Hangar (CASM)

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### 5.3.5 Required New Facilities

#### Collection Storage

Current artefact storage consists of three leased, industrial-grade buildings not deemed suitable for the proper preservation of the NMST's collection. The shortcomings of these buildings were raised by the Auditor General in two special examinations of the Corporation in 2004 and 2009. The limited space has resulted in the buildings being at 130% capacity, often obliging the Corporation to decline valuable additions to its national collection. Moreover, tenant improvements continue to be required to adapt the facilities.

The Corporation has completed a functional program to handle current collection needs and to accommodate an additional 25 years of growth. The Corporation has also begun to explore the development of a multi-purpose Science Technology and Innovation Campus, which would leverage investments from the private sector, as well as the NMST's existing relationships with industry and academia around science and technology research and innovation.

The Corporation will pursue consultations with government representatives to ensure that all options are being considered and processes remain transparent. The NMST will develop site plans, conduct archeological and geotechnical surveys, and environmental studies among others. The results will provide the Corporation with parameters for soliciting interest from the private sector. In order to explore these potential opportunities, authorities may have to be sought should the NMST seek to enter into a real estate transaction.

#### Canada Aviation and Space Museum (CASM)

The CASM consists of two main buildings and two smaller supporting structures. The site, reaching 25 years, has been updated thanks to funding decisions in 2006 and 2008. Phase II of this project will be the implementation of its long-term site plan, including a weather-protected link between the museum and the airplane hangar buildings. The lack of this physical link is dissuading visitors, especially persons with disabilities, seniors, and school groups during cold, windy and wet days, from experiencing the entire CASM collection. The link would encourage visitors to visit the rest of the world renowned aviation collection held in the hangar. The CASM will also be involved in the coordination of the reconstruction of the Rockcliffe Airport buildings, as they form an integral part of the site plan.

The Corporation requires a space to conserve and restore large-scale aviation artefacts at CASM. Such a facility was included in the site plan developed for CASM, however, no

source of funds has been identified. As the aviation collection expands, so does the Corporation's need for a conservation and restoration facility. Based on its understanding of the aviation industry and its existing relationships with institutions and schools that provide pilot training and education, the Corporation has noted the need for pilot training and technical laboratory space for the growing aeronautics and astronautics industry. The technical laboratory space is the same type of space that the Corporation would need to do conservation and restoration work on aircraft.

The Corporation will complete the development of a business case for the construction of a prefabricated fabric and steel hangar that would provide some technical/laboratory space to serve its immediate needs as well as those of the industry. The building would consist of a metal skeletal structure with panels that slip in between the frames to create a rigid structure like an aircraft hangar. The building "envelope" is a form of synthetic material is also insulated to R40. The metal structure has a lifespan of 60 years minimum and the envelope is guaranteed for 25 years. Because it would be located on a concrete pad and is very air tight and well insulated it would require approximately 75% of the normal operating costs of a comparable building.

The hangar would be erected in a location where the conservation and restoration facility was identified in the CASM site plans. The building would house an aviation training and research centre, and include space for pilot training that would be leased out to the schools and institutions.

The hangar would serve as a temporary solution until funding to build a permanent aviation conservation and restoration facility is identified, which the Corporation will pursue in the long term. The business case under development is evaluating the cost-benefit of the hangar, including its potential to be self-sustaining from lease revenues. As the Corporation does not have funds available to construct or operate the hangar, funding will be sought from other sources, including the private sector. Revenues generated could also help fund large-scale conservation projects.

The centre would be a non-partisan environment where elementary, high school, college, and university students can be empowered to follow aeronautical related careers. The centre and CASM would also provide excellent opportunities to showcase the future of this sector.

While opportunities to advance this plan may be possible with some of the collaborations currently being discussed with industry, any future capital projects at CASM remain unfunded.

## Canada Agriculture and Food Museum (CAFM)

The CAFM is located at the Central Experimental Farm (CEF) in Ottawa. The CEF has been designated a national heritage site and provides a perfect setting for the museum. The CAFM occupies five Agriculture and Agri-Food Canada (AAFC) buildings. The site benefited from an investment Budget 2008 totalling \$4.6 million for infrastructure projects as part of the long-term site plan for the museum, which was approved by both AAFC and the National Capital Commission in 2006–2007. The upgrades include a purpose-built visitor centre, new classrooms and improved exhibition space. The site plan also addresses traffic flow for enhanced operations and increased visitor safety on the site. Further phases of the long-term capital plan, such as the final fit-up of the Learning Center, and civil work to enhance visitor access and safety, including site circulation and parking relocation, remain unfunded.

As the CAFM continues to explore new frontiers and diversify its audiences with the new Learning Centre, it continues to look to the future. To complete the final phase of the Master Site Plan, the CAFM will begin raising awareness and a capital campaign to help finance a food security and nutrition centre. At this time, the amount that could be fundraised in a capital campaign is unknown; further analysis is required. The centre will be a multi-function facility that will fulfil the Canada Agriculture and Food Museum's requirements for visitor accessibility, revenue generation, programming, and safety.

The centre will include visitor amenities that are expected at a national museum such as a group reception area/lobby, the option to purchase simple refreshments and souvenirs, secure areas for financial transactions and first aid as well as indoor options for events should inclement weather prevent outdoor activities. The new centre will also address market demand for local, regional, national, and international meeting place/retreats/award ceremonies/public consultation. It would also provide an option to bring in high-profile exhibitions, display more of the national collection to the public and the potential to accommodate other partners to work from the site.

## ANNEX 1 – PLANNED EXHIBITIONS FOR 2015-2016

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### **Canada Agriculture and Food Museum**

- **A Taste of Science** (travelling exhibition)
- Display for the International Year of Soil

### **Canada Aviation and Space Museum**

- **Life in Orbit: The International Space Station**
- Renewal of the early aviation exhibition

### **Canada Science and Technology Museum**

- Closed until 2017

## ANNEX 2 – NMST BOARD OF TRUSTEES

(as of April 1, 2015)

Note: At the end of their term, trustees continue to serve on the Board until a replacement is named. There is currently one trustee whose term has expired.

<b>Board Member</b>	<b>City, Province</b>	<b>Term</b>
Gary Polonsky, Chairperson	Courtice, Ont.	<i>Reappointment:</i> January 14, 2014–January 13, 2018 <i>Original term:</i> January 14, 2010–January 13, 2014
Jim Silye, Vice-Chairperson	Arnprior, Ont.	<i>Reappointment:</i> June 18, 2014–June 17, 2018 <i>Original term:</i> June 18, 2010–June 17, 2014
Marie-Claire Bélanger	Montréal, Que.	March 1, 2012–February 29, 2016
Harold F. Bjarnason	Gimli, Man.	<i>Reappointment:</i> October 1, 2013–September 30, 2017 <i>Original term:</i> April 23, 2009–September 30, 2013
Jane Hungerford	Vancouver, B.C.	March 7, 2013–March 6, 2017
Helen Johns	Exeter, Ont.	October 4, 2013–October 3, 2016
Glenn Schmidt, P.Eng., MBA	Calgary, Alta.	December 17, 2013–December 16, 2017
E. Virginia I. McLaughlin	Cobourgh, Ont.	<i>Reappointment:</i> December 18, 2012–December 17, 2016 <i>Original term:</i> December 18, 2009–December 17, 2012
David Cohen	Westmount, Que.	June 13, 2014–June 12, 2018
Neil Gary Russon, FCMA, FCPA	Fredericton, N.B.	<i>Reappointment:</i> March 1, 2012–February 29, 2016 <i>Original term:</i> January 29, 2008–February 29, 2012
David Desjardins	New Maryland, N.B.	February 5, 2015–February 4, 2019
<b>Director and Chief Executive Officer</b>		<b>Term</b>
Alex Benay		July 2, 2014–July 1, 2019