
Supplementary Information Tables:
2019–20 Departmental Results Report

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Departmental Sustainable Development Strategy

1. Context for the Departmental Sustainable Development Strategy

The [2016 to 2019 Federal Sustainable Development Strategy \(FSDS\)](#) presents the Government of Canada's sustainable development goals and targets, as required by the [Federal Sustainable Development Act](#). The National Research Council adheres to the principles of the FSDS, and while not bound formally by the Act, supports reporting on the implementation of the Departmental Sustainable Development Strategy

2. Sustainable Development in the National Research Council

The National Research Council's Departmental Sustainable Development Strategy for 2017 to 2020 describes the department's actions in support of achieving a low carbon government. This supplementary information table presents available results for the departmental actions pertinent to this goal. Previous years' supplementary information tables are posted on the [NRC's website](#).

The [Policy on Green Procurement](#) supports the Government of Canada's effort to promote environmental stewardship and sustainability. In keeping with the objectives of the policy, the NRC continued to support sustainable development by integrating on-going best-practices in its green procurement.

- All annual performance evaluations for procurement personnel included the objective to manage and conduct daily procurement and/or Materiel Management (MM) operations in accordance with NRC, Treasury Board (TB) and Public Services and Procurement Canada (PSPC) policies and regulations. More specifically, all procurement personnel had the measurable objective to ensure proper application of environmental and green procurement considerations, as appropriate;
- All procurement personnel used procurement vehicles and tools as established by PSPC and SSC for mandatory commodities. Furthermore, all RFPs issued by the NRC contained environmental considerations clauses and were published electronically with responses from vendors in electronic format only. This measure was implemented in support of the green procurement initiative;
- All of the NRC's procurement personnel (100%) completed the Public Service Green Procurement course. The importance of green procurement continued to be consistently reinforced by its functional managers across the NRC;
- All janitorial contracts issued during the year had environmental consideration (use of products, equipment and processes) that would minimize any environmental impacts; and

- Telematics units were leveraged to determine the best time to replace fleet vehicles by providing real-time annual operating costs, mileage and total days of use. To date, the NRC has disposed of two vehicles and replaced them with two zero emission vehicles based on the analysis of Telematics data.

In addition to Green Procurement, the NRC has shared energy and emission data with the Treasury Board Secretariat Centre for Greening Government, and the NRC has developed a strategy to meet and sustain the target of 40% reduction in emissions.

3. Departmental performance by FSDS goal

The following table provides performance information on departmental actions in support of the FSDS goal listed in section 2.

Context: Low-Carbon Government

In 2019–20, the NRC continued to implement its Low-Carbon Initiative, green procurement and green considerations to meet its targets for the goal of a low-carbon government.

Low-Carbon Government: The Government of Canada leads by example by making its operations low-carbon

FSDS target(s)	FSDS contributing action(s)	Corresponding departmental action(s)	Starting point(s) Performance indicator(s) Target(s)	Results achieved	Contribution by each departmental result to the FSDS goal and target
Reduce greenhouse gas emissions from federal government buildings and fleets by 40% below 2005 levels by 2030, with an aspiration to achieve it by 2025	Support the transition to a low-carbon economy through the launch of an NRC-wide low-carbon strategy	As part of the NRC's Low-Carbon Initiative, which was launched in 2017, the NRC will reduce emissions through awareness, energy management, space rationalization and energy retrofit projects.	Reduction of emissions relative to 2005 Starting point: 29% (March 2019) Target: 40%	<ul style="list-style-type: none"> 40% 	The NRC continued to implement its Low-Carbon Initiative to meet and sustain the target of a 40% reduction in emissions in support of the FSDS goal and target. This supports Sustainable Development Goal 13: Take urgent action to combat climate change and its impacts.

FSDS target(s)	FSDS contributing action(s)	Corresponding departmental action(s)	Starting point(s) Performance indicator(s) Target(s)	Results achieved	Contribution by each departmental result to the FSDS goal and target
<p>Disclose and take steps to reduce the most significant carbon and broader environmental footprints of department supply chains</p>	<p>Support the transition to a low-carbon economy through green procurement.</p>	<p>Procurement officers are required to take green procurement training.</p> <p>Maintenance contracts require proponents to include green considerations as part of their services.</p>	<p>Percentage of “green”-trained procurement officers</p> <p>Starting point: 100% Target: 100%</p> <p>Percentage of maintenance contracts with “green” considerations</p> <p>Starting point: 86% Target: 90%</p>	<ul style="list-style-type: none"> • 100% • 100% 	<p>Three RFP were issued for janitorial contracts during the year. All three (100%) had environmental consideration that would minimize any environmental impacts.</p> <p>This supports Sustainable Development Goal 12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities.</p>

4. Report on integrating sustainable development

During the 2019–20 reporting cycle, the National Research Council had no proposals that required a strategic environmental assessment (SEA) and no public statements were produced.

Details on transfer payment programs of \$5 million or more

General information

Name of transfer payment program	International Astronomical Observatories Program
Start date	1978
End date	Ongoing
Type of transfer payment	Contribution
Type of appropriation	Estimates
Fiscal year for terms and conditions	2015–16
Link to the NRC's Program Inventory	Core Responsibility: Science and Innovation Program: Herzberg Astronomy & Astrophysics
Description	<p>Astronomy is a global science. The increasing cost of leading-edge observatories and the scarcity of ideal observation sites have led to a greater focus on international collaboration for large-scale astronomy projects which lead to advances in our knowledge and understanding of the universe.</p> <p>The NRC, in collaboration with other international bodies, provides financial contributions to support the management and operations of offshore ground-based observatories and their related facilities, including the Canada-France-Hawaii Telescope (CFHT), the twin telescopes of the Gemini Observatory and the Atacama Large Millimeter Array (ALMA). The NRC participates in the oversight and direction of these facilities and their research capabilities. The NRC also represents Canada in the Square Kilometre Array (SKA) consortium for the pre-construction phase of the telescope. In 2015, Canada joined the international partnership to participate in the Thirty Meter Telescope (TMT). The NRC, on behalf of Canada, provides both financial and in-kind contributions.</p> <p>International agreements governing these observatories are long-term commitments that specify contributions to support preconstruction design and development, construction, operation and maintenance, capital improvements (e.g., development of new astronomical instruments and other facility upgrades) and decommissioning of the international ground-based observatories and their related facilities. In addition, they include commitments to support the university-based user communities to ensure a fair and progressive use of these observatories. The NRC participates in the governance of these international facilities on behalf of the Canadian astronomy research community and provides appropriate support, including sophisticated data management services and instrumentation. Through the NRC's financial and in-kind contributions, the Canadian astronomy community is assured merit-based access to these facilities with appropriate support.</p>

	<p>Recipients are not required to repay funds obtained under this transfer payment program.</p>
<p>Results achieved</p>	<ul style="list-style-type: none"> • Demand by astronomers for international telescopes continued to exceed the time available, by factors ranging from two to more than four, depending on the observatory, an indicator of the relevance of the observatories and their instrumentation. Another indicator is their scientific productivity: 212 scientific papers were published by users based on data obtained using the CFHT, 259 based on data from the Gemini Observatory, and 452 based on data obtained using ALMA. • NRC astronomers and astrophysicists published 156 refereed journal articles, 98 non-refereed publications and made 39 presentations at national & international institutes, conferences and workshops. • ALMA awarded its first Canadian-led large program, VERTICO (Virgo Environment traced in CO), to a team of thirty experts led by post-doctoral researcher Toby Brown at McMaster University. VERTICO will produce high-resolution maps of molecular hydrogen gas in 51 spiral galaxies of the Virgo Cluster. • The NRC was awarded a contract for a feasibility study to develop an upgraded correlator, a digital signal processing system, for the ALMA observatory. The NRC correlator team, integrating NRC and Canadian industry resources, will develop a design and integration solution based on the NRC's TALON technology and Frequency Slice Architecture (FSA) signal processing algorithms. • In March 2020, the NASA New Horizons Team, which includes NRC researchers JJ Kavelaars and Stephen Gwyn, had three papers published in the journal <i>Science</i> indicating that the <i>in situ</i> observations of the outer solar system object Arrokoth visited by the New Horizons spacecraft strongly suggest that the “streaming instability” process is behind the origins of such objects. • The NRC was awarded a contract to design a new pyramid-based wavefront sensor, a key component for the planned upgrade of the Gemini Planet Imager. The contract includes an option to proceed to fabrication. The upgrade will allow this instrument to remain competitive over the coming decade. • The NRC's Canadian Astronomy Data Centre (CADC), in collaboration with the legacy survey teams for two CFHT science instruments, SPIRou and SITELLE, developed a computing environment on the Canadian Advanced Network for Astronomical Research (CANFAR) platform to help ensure the efficient analysis and distribution of observational data and measurements. • The CADC houses over 1250 terabytes (TB) of the world's astronomical data. From these collections, the CADC delivered over 149 million files comprising 588 TB servicing data needs to over 8000 registered users at more than 2000 distinct locations worldwide. • The team building the CFI-funded Gemini Infrared Multi-Object Spectrometer (GIRMOS), consisting of the NRC, seven Canadian universities and the Gemini Observatory, successfully passed conceptual design review in September 2019. This next-generation instrument will increase the efficiency of telescope time and enable significant progress over a wide range of astronomical research. • Working with the Canadian Initiative for Radio Astronomy Data Analysis, the CADC developed an enhanced data model standard to allow optical and radio astronomical data to be stored and distributed by a unified system.

Findings of audits completed in 2019–20	Not applicable
Findings of evaluations completed in 2019–20	Evaluation completed in 2016–17 (Evaluation of NRC Herzberg Astronomy and Astrophysics (HAA) Portfolio). The next evaluation is scheduled for completion in 2021–22.
Engagement of applicants and recipients in 2019–20	The NRC manages observatories established or maintained by the Government of Canada for the benefit of the Canadian astronomy research community, aligning its contributions to the priorities of the community's Long Range Plan for Astronomy and Astrophysics. The NRC participates on the Boards which oversee the observatories to ensure that the science directions and programs of the facilities reflect Canadian strengths and interests. In addition, the NRC ensures that these activities increase opportunities for Canadian researchers and firms to develop relevant instrumentation for the observatories. To carry out its roles effectively, the NRC provides current information about each observatory to research community-based committees of scientists which provide expert advice on observatory operations and development. The NRC provides extensive support to the user community through numerous services extending from administering the time allocation process for Canadian researchers through to delivery of science-ready data (through the CADDC).

Financial information (dollars)

Type of Transfer Payment	2017–18 Actual spending	2018–19 Actual spending	2019–20 Planned spending	2019–20 Total authorities available for use	2019–20 Actual spending (authorities used)	Variance (2019–20 actual minus 2019–20 planned)
Total grants	-	-	-	-	-	-
Total contributions	21,903,992	27,723,107	55,418,393	57,695,229	29,044,279	(26,374,114)
Total program	21,903,992	27,723,107	55,418,393	57,695,229	29,044,279	(26,374,114)
Explanation of variances	The significant variance of (\$26,374,114) between the planned spending and actual spending is primarily due to project delays associated with Canada's participation in the construction of the TMT that are outside the NRC's control. As a result, the NRC has re-profiled \$26.0M of its 2019–20 funding related with Canada's contribution to the TMT to future years.					

General information

Name of transfer payment program	TRIUMF(voted)
Start date	April 1, 1977
End date	Ongoing
Type of transfer payment	Contribution
Type of appropriation	Estimates
Fiscal year for terms and conditions	2015–16
Link to the NRC's Program Inventory	Core Responsibility: Science and Innovation Program: TRIUMF
Description	<p>TRIUMF is Canada's particle accelerator centre. The laboratory is one of Canada's key investments in large-scale research infrastructure. It provides world-class facilities for research in sub-atomic physics, accelerator science, life sciences, and materials science. A consortium of 21 Canadian universities (14 full members and seven associate members) owns and operates TRIUMF. TRIUMF receives its federal operational funding through the NRC in five-year allocations via a contribution agreement. The NRC plays an important oversight and stewardship role for TRIUMF on behalf of the Government of Canada.</p> <p>Recipients are not required to repay funds obtained under this transfer payment program.</p>
Results achieved	<ul style="list-style-type: none"> • TRIUMF contributed to the publication of 331 manuscripts in scientific journals. • TRIUMF researchers involved in the T2K experiment made a major breakthrough in determining properties of neutrinos, in particular the rate at which neutrinos and their antimatter counterparts, antineutrinos, oscillate between different flavours. This result, published in <i>Nature</i>, has significant implications for the predominance of matter over antimatter in our universe. • The team at TRIUMF's DRAGON facility carried out the measurements of radioactive capture reactions involving Neon isotopes that resulted in the first ever measurement of key astrophysical processes of this kind. This research is critical to understanding how chemical elements, in particular sodium (Na), are formed in stellar object and stars. • The Molecular and Material Science team at TRIUMF carried out studies (together with the University of Guelph and others) that investigated how the chemistry of atoms can be affected by confinement within nanostructures – an investigation with potential implications for long-term safe storage of nuclear waste, novel ways of generating and storing hydrogen, and new technologies for capturing and reusing greenhouse gases.

	<ul style="list-style-type: none"> • Major achievements on the ARIEL facility included critical progress in the areas of target hall shielding, hot cell production, and commissioning planning; construction of the CANadian Rare isotope facility with Electron Beam ion source (CANREB) project was completed and all CANREB devices are operational and are undergoing preparation for commissioning and beam operation; the ARIEL electron linear accelerator was also successfully commissioned, delivering 31 MeV beam energy and 1 kW beam power level – setting the stage for future phases of ARIEL development. • In support of research collaborations and partnerships, TRIUMF hosted 1,186 scientific visitors, students, and users, 715 of which came from international institutions. • To promote the availability of global talent, TRIUMF trained more than 240 highly qualified personnel, including undergraduate and graduate students, and post-doctoral researchers. • A ground-breaking ceremony, held in April 2019, kicked off construction on the Institute for Advanced Medical Isotope facility. • TRIUMF continued to advance its plan to produce and commercialize Actinium-225, a new isotope that shows great promise as a new treatment option for patients with late stage currently untreatable cancers. Partnering opportunities in drug development projects and isotope production are currently underway. • TRIUMF spinoff, ARTMS Products –created in collaboration with BC Cancer, the Centre for Probe Development and Commercialization (CPDC) and Lawson Health Institute in response to the isotope crisis from the closing of the Chalk River reactor – attracted an experienced CEO from the USA and announced partnerships with global companies including Telix Pharma and ImaginAb Inc. ARTMS also closed a US\$19M Series A venture financing led by global venture firm, Deerfield Management and seed investor, Global Health Science Fund. • Another TRIUMF spinoff, CRM Geotomography, leveraged their selection as part of the Creative Destruction Lab – West incubator cohort into growing their business by adding an experienced CEO/seed investor. The company has re-branded as Ideon.ai and is using their experience and proprietary detector technologies and artificial intelligence techniques to provide x-ray like imaging beneath the earth’s surface. • TRIUMF has defined the requirements for a new Enterprise Resource Planning system. This modernization of core systems will result in the reduction of manual data entry and create new efficiencies across the continuum of HR and Finance processes. • Work continued in the ongoing modernization of building infrastructure across the laboratory.
<p>Findings of audits completed in 2019–20</p>	<p>Not applicable</p>
<p>Findings of evaluations completed in 2019–20</p>	<p>Evaluation completed in 2018–19 (Evaluation of TRIUMF). The next evaluation is scheduled for 2022–23.</p>

<p>Engagement of applicants and recipients in 2019–20</p>	<p>The NRC chairs the Agency Committee on TRIUMF (ACT), which includes the federal agencies that fund and oversee activities at TRIUMF, providing TRIUMF management the opportunity to present progress and discuss future directions for the facility.</p> <p>The NRC also manages the Advisory Committee on TRIUMF (ACOT), composed of international experts within disciplines that span the research and technology activities of TRIUMF. ACOT reports its findings to the NRC and TRIUMF senior management twice annually, making recommendations on programs and management as well as reporting on the scientific and technological achievements of TRIUMF programs and facilities. Observer representatives from the Natural Sciences and Engineering Research Council of Canada, the Canada Foundation for Innovation, the Canadian Institute of Nuclear Physics, the Canadian Institute of Particle Physics, the materials science community and TRIUMF's user community ensure that TRIUMF's directions are well aligned with the research community's needs and that TRIUMF is working with all its constituencies across Canada. The Committee considers all aspects of the TRIUMF program, with a particular emphasis on science and technological issues to ensure the relevance, impact, and world-class standing of TRIUMF's activities.</p> <p>Through NRC activities in ACT and ACOT, the NRC maintains a close relationship with TRIUMF. Dialogue ensures that Government of Canada investments are optimal, and that the NRC meets the needs of its recipient, as well as provides a vehicle for feedback on the transfer payment management process.</p> <p>TRIUMF has approximately 430 staff and students supported via the NRC's contribution agreement. An additional 133 positions are supported through other sources for specific designated purposes, including temporary funds to operate new capital infrastructure. In total, TRIUMF provides training for more than 200 undergraduate, graduate students, and postdoctoral fellows per year. TRIUMF has numerous programs aimed at young people, students, teachers, and the general public to ensure that as many as possible share the wonder of discovery and experience the excitement generated by one of Canada's premier laboratories. In addition, TRIUMF offers a suite of programs to aide in the growth and development of professional skills for its graduate students and postdocs.</p>
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Financial information (dollars)

Type of Transfer Payment	2017–18 Actual spending	2018–19 Actual spending	2019–20 Planned spending	2019–20 Total authorities available for use	2019–20 Actual spending (authorities used)	Variance (2019–20 actual minus 2019–20 planned)
Total grants	-	-	-	-	-	-
Total contributions	54,572,800	57,280,490	55,162,800	55,162,800	55,162,800	-
Total program	54,572,800	57,280,490	55,162,800	55,162,800	55,162,800	-

General information

Name of transfer payment program	Industrial Research Assistance Program (IRAP)
Start date	September 1, 2018 (T&Cs renewal date; original start date: April 1, 1965)
End date	Ongoing
Type of transfer payment	Contribution
Type of appropriation	Estimates
Fiscal year for terms and conditions	2018–19
Link to the NRC's Program Inventory	Core Responsibility: Science and Innovation Program: Industrial Research Assistance Program (IRAP)
Description	<p>The program contributes to the growth and prosperity of Canadian small and medium-sized enterprises (SMEs) by stimulating innovation, adoption and/or commercialization of technology-based products, services, or processes in Canada. This is done through: 1) technical and related business advice and networking facilitated by a cross-Canada network of field professional staff; 2) cost-shared merit-based contributions; and 3) contributions supporting employment of post-secondary graduates. This program has the following streams: Contributions to Firms; Contributions to Organizations; and Youth Employment Program (YEP).</p> <p>NRC IRAP supports the placement of graduates in SMEs through its participation in the delivery of YEP sponsored by Employment and Social Development Canada's Youth Employment and Skills Strategy.</p> <p>Recipients are not required to repay funds obtained under this transfer payment program.</p>
Results achieved	Results are described in detail in the NRC's 2019–20 Departmental Results Report; see main document.
Findings of audits completed in 2019–20	Not applicable
Findings of evaluations completed in 2019–20	An Evaluation of IRAP was completed in 2017–18. The next evaluation is planned to be completed in 2021–22.

Engagement of applicants and recipients in 2019–20	<p>NRC IRAP is a national program managed on a regional basis with over 265 Industrial Technology Advisors (ITAs) located in approximately 120 communities across the country, who provide customized advice to growth oriented technologically innovative SMEs. ITAs are engaged with client SMEs throughout the entire contribution management process, from building project proposals through to project completion.</p> <p>At the end of their funded project, recipients are required to complete an online Post-Project Report. This assessment captures information on the recipient's experience with NRC IRAP and, along with published service standards, is used by the program to develop continuous program improvements.</p> <p>NRC IRAP has an Advisory Board composed of 10 to 12 members from the industry sector and industry associations. This Board provides advice to NRC IRAP management and brings an external perspective on the strategic directions and management of the program.</p> <p>NRC IRAP is actively engaged with Treasury Board Secretariat (TBS) Grants and Contributions Reform. Participation in workshops and constant alignment with recent TBS policy and guidelines has enabled the program to steadily move toward principles such as a Recipient Engagement Strategy.</p>
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Financial information (dollars)

Type of Transfer Payment	2017–18 Actual spending	2018–19 Actual spending	2019–20 Planned spending	2019–20 Total authorities available for use	2019–20 Actual spending (authorities used)	Variance (2019–20 actual minus 2019–20 planned)
Total grants	-	-	-	-	-	-
Total contributions	192,314,017	275,470,812	310,014,000	335,703,426	335,412,426	25,398,426
Total program	192,314,017	275,470,812	310,014,000	335,703,426	335,412,426	25,398,426
Explanation of variances	The variance of \$25,398,426 between the actual spending and planned spending is within accepted tolerances.					

General information

Name of transfer payment program	Collaborative Science, Technology and Innovation Program
Start date	April 1, 2018
End date	Ongoing
Type of transfer payment	Grants & Contributions
Type of appropriation	Estimates
Fiscal year for terms and conditions	2018–19
Link to the NRC's Program Inventory	Core Responsibility: Science and Innovation Program: Collaborative Science, Technology and Innovation Program (CSTI)
Description	Provides grant and contribution funding for external collaborators with complementary capabilities (e.g. SMEs, post-secondary institutions and non-profit research organizations). The program is comprised of 1) NRC Collaborative Research & Development (R&D) initiatives – funding external collaborators working with NRC researchers on projects that make up a series of large-scale collaborative R&D programs in priority areas; 2) the Ideation Fund – funding external collaborators working with NRC personnel to encourage, test and validate transformative self-directed, exploratory research ideas; and 3) the Outreach Initiative – funding to support conferences, workshops, symposia or other outreach initiatives, in order to promote engagement of Canadians, particularly those in under-represented groups, interested in Science, Technology, Engineering and Mathematics (STEM).
Results achieved	42 collaborative projects received funding in 2019–20, for a total of \$889,689 grants support for the New Beginnings initiative; this included three projects approved in 2018–19 as part of the first round. A total of 45 projects were approved in round 2, with 39 funded in 2019–20, and the remaining 6 projects will receive funding in 2020–21. Nine challenge and supercluster support programs reviewed by expert panels and launched, and 69 collaborative projects funded for a total of \$12,973,680 in grant and contribution support for these collaborative R&D programs. 15 outreach projects funded for a total of \$250,000 in grants support, helping to provide many young Canadians and underrepresented groups with exposure to formative STEM learning opportunities and experiences.
Findings of audits completed in 2019–20	Not applicable
Findings of evaluations completed in 2019–20	2022–23 (five year cycle)

Engagement of applicants and recipients in 2019–20	<p>NRC Collaborative R&D Initiatives, potential collaborators, stakeholders and recipients were invited by the NRC to participate in the design of four challenge programs and five supercluster support programs. External researchers worked with NRC researchers to develop projects to advance the objectives of these programs and were asked to apply for grant and contribution funding towards their costs of collaboration.</p> <p>For the Ideation Fund, the second annual call for the New Beginnings Initiative was held for NRC researchers to submit project proposals involving collaborators. Once collaborative projects were selected, recipients were invited to apply for grant funding. The first annual call for the Small Teams Initiative was launched for small teams of NRC researchers to submit proposals to conduct exploratory research with collaborators.</p> <p>For the Outreach Initiative, the NRC proactively reached out to extramural partners to build awareness around STEM and support the talent pipeline within academic and policy stakeholder communities.</p>
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Financial information (dollars)

Type of Transfer Payment	2017–18 Actual spending	2018–19 Actual spending	2019–20 Planned spending	2019–20 Total authorities available for use	2019–20 Actual spending (authorities used)	Variance (2019–20 actual minus 2019–20 planned)
Total grants	-	1,011,870	3,000,000	6,997,744	6,997,744	3,997,744
Total contributions	-	8,090,335	24,000,000	7,115,625	7,115,625	(16,884,375)
Total program	-	9,102,205	27,000,000	14,113,369	14,113,369	(12,886,631)
Explanation of variances	The significant variance of (\$12,886,631) between the actuals and the planned spending in grants and contributions is mainly due to internal reallocations of resources to NRC IRAP (\$10,111,238) and to the International Astronomical Observatories Program (\$2,775,393).					

Gender-based analysis plus

Institutional GBA+ capacity

The NRC continued to expand its GBA+ framework, accountability and reporting mechanisms. While the NRC does not have a specific GBA+ policy or statement of intent, GBA+ is applied systematically to the NRC’s policy planning and development. The implementation of the GBA+ framework is part of the NRC’s Equity, Diversity and Inclusion (EDI) Strategy to ensure gender and diversity considerations from ideation through to outcome measurement. The following actions are intended to enhance GBA+ capacity:

- The NRC is integrating GBA+ into annual operational plans at the research centre and program level to help in applying GBA+ to program design, as well as monitoring and evaluation.
- NRC programs, such as NRC IRAP and the Collaborative Science, Technology and Innovation Program (Challenge Programs) are integrating GBA+ into their program delivery. Challenge Programs, GBA+ and EDI strategies have been developed and will be updated on an evergreen basis.
- Training and other capacity building initiatives have been conducted with Program Directors and Planners across the organization.

The Responsibility Centre for GBA+ was established in the Secretary General’s division, and the Secretary General fills the role of GBA+ champion for the NRC.

Highlights of GBA+ Results by Program

Research Centres

GBA+ commitments are included in the NRC’s operational plans, and the NRC’s EDI Strategy has served as a tool to increase diversity and inclusiveness in the NRC workforce and NRC’s engagements as a partner/collaborator.

At the program level, the NRC is moving toward implementing GBA+ across its programs. GBA+ approaches are now required for proposals submitted during the application process for NRC Ideation and Small Teams programs. In addition, GBA+ strategies are now required for all R&D programs across the NRC, including summaries of GBA+ approach in program proposals.

To support these requirements, the NRC held a series of GBA+ awareness sessions for Program Directors and Challenge Officers in August and October of 2019. The sessions included GBA+ training and a template to help apply GBA+ to program planning in Challenge Programs and Superclusters, as well as developing strategies with regard to GBA+ and EDI.

<p>NRC Industrial Research Assistance Program</p>	<p>Statistics Canada data shows that few businesses are owned by women or visible minorities in the Canadian SME community: for example, majority female-owned SMEs represented 16% of all SMEs, and SMEs equally owned by females and males represent 20%. A study on financing and growth of SMES by Innovation, Science and Economic Development Canada notes that only 10% are majority-owned by visible minorities.</p> <p>To address the imbalance in these statistics, NRC IRAP has undertaken efforts such as training of field staff and management to remove barriers, and the establishment of a dedicated sector-team within IRAP to improve access to IRAP for women. NRC IRAP is also working with the Regional Development Agencies to better align with the Women’s Entrepreneurship Strategy and its four pillars: Helping women-Owned Businesses Grow, Engaging Data and knowledge, Increasing access to Capital, and Improving Access to Federal Business Innovation Programming. Finally, NRC IRAP is committed to working with incubators and accelerators to identify and better engage firms led by under-represented groups.</p>
<p>Internal Services</p>	<p>The NRC’s Human Resources Branch has overall responsibility for the implementation of the NRC’s EDI Strategy, which includes three pillars – 1. Diverse and representative workforce, 2. Barrier-Free NRC, and 3. Inclusive Culture – all built on a foundation of clear accountability, governance and measurement.</p> <p>Some measures of the NRC EDI Strategy include:</p> <ul style="list-style-type: none"> • Tools and resources to recruit and retain a representative, diverse and inclusive workforce, such as a focusing of hiring activities on the NRC’s representative groups, implementation of targeted actions to include more diversity in the next generation of STEM talent, and consideration of representation gaps when developing talent through workforce planning and leadership development programs. • Integration of diversity and inclusion values and practices into existing corporate practices, including training for managing bias in hiring, analysis of recruitment and promotion criteria to address barriers, and ensuring that R&D project/program selection includes criteria that supports an inclusive, diverse environment. • An environment in which all individuals can work and engage effectively and to their full potential, including adoption of inclusive practices such as land acknowledgement in formal gatherings, support for the formation of grassroots networks and communities (e.g., LGBTQ2), and the establishment of a mentoring approach that supports designated groups, particularly women and Indigenous peoples. <p>The NRC Human Resources Branch tracks representation statistics for the four employment equity designated groups through self-reported information. To facilitate this reporting, the NRC implemented an online mechanism for employees to update self-ID data and conducted an organization-wide self-ID campaign.</p> <p>The NRC has acknowledged gaps in its workforce representation, particularly for its employees in Science, Technology, Engineering, and Mathematics (STEM) positions, for all four employment equity designated groups (women, Indigenous Peoples, persons with disabilities, and members of visible minorities). In 2019–20, employment equity data shows that the NRC’s total workforce is composed of 37.9% women compared with 37.6% available in the workforce; 19.8% visible minorities compared with 23% available in the workforce; 3.0% persons with disabilities compared with 8.5% available in the workforce; and 1.1% Indigenous Peoples compared with 2.2% available in the workforce.</p> <p>In addition, another part of NRC Internal Services, the Audit and Evaluation office, has developed an approach to GBA+ and is incorporating GBA+ into evaluations where it is appropriate to do so.</p>

Genomics R&D Initiative (GRDI)

General information

Name of initiative	Genomics R&D Initiative (GRDI)
Lead department	National Research Council Canada (NRC)
Federal partner departments	Agriculture and Agri-Food Canada (AAFC), Canadian Food Inspection Agency (CFIA), Fisheries and Oceans Canada (DFO), Environment and Climate Change Canada (ECCC), Health Canada (HC), National Research Council Canada (NRC), Natural Resources Canada (NRCan), Public Health Agency of Canada (PHAC). Canadian Institutes for Health Research (CIHR) received a onetime allocation in 1999–2000.
Non-federal and non-governmental partners	Not applicable
Start date of initiative	April 1999, renewed in 2002–03, 2005–06, 2011–12, and 2014–15. Ongoing funding starting in April 2019
End date of initiative	Ongoing
Description of initiative	The Genomics R&D Initiative (GRDI) supports genomics research inside federal government laboratories. It focuses on mandates and priorities of participating departments and agencies. Research supported by the GRDI covers areas such as health care, food safety and global food security, sound management of natural resources, a sustainable and competitive agriculture sector, and environmental protection, with collaboration with university and private sectors. Three independent evaluations (2006, 2011, and 2016) have confirmed that the GRDI has successfully delivered on its stated objectives. Additional information may be found on the GRDI web site .
Governance structures	<p>An interdepartmental Assistant Deputy Minister (ADM) Coordinating Committee (CC) has been established to oversee collective management and coordination of the federal GRDI. It is chaired by the lead agency (NRC) with membership at the ADM-level from each of the organizations receiving funding and guest representatives from Innovation, Science and Economic Development and Genome Canada. It is responsible for the overall strategic direction for the GRDI and approval of investment priorities. It ensures that effective priority setting mechanisms are established within departments and agencies, and that government objectives and priorities are addressed. The Committee also ensures that common management principles are implemented and collaborations between organizations are pursued wherever relevant and possible. It typically meets three times a year at the call of the Chair, more often when warranted by specific needs for decision-making.</p> <p>An Interdepartmental Working Group (WG) supports the work of the committee. It is chaired by the lead agency (NRC) with membership at the Director level from all participating departments/agencies, and Innovation, Science and Economic Development. The mandate of the WG is to provide recommendations and strategic advice to the ADM CC regarding strategic priority setting and overall management of the GRDI. The WG is responsible for providing direction to GRDI program activities related to operational delivery, implementation planning and investment priority setting. The WG also supports evaluation and reporting requirements related to the Initiative. It meets about every two months, more often when warranted by specific needs for recommendations and advice, as well as to develop and approve the GRDI Annual Performance Report.</p>

	A Coordination Function, housed at the NRC, provides GRDI-wide program coordination, communication, networking and outreach support. This includes support to the ADM CC and the GRDI WG, transparent and effective communication to departments of the planning cycle, process requirements, financial administration and other project management requirements, and support for interdepartmental shared project planning and implementation. This function is also responsible for conducting studies and analyses to serve as input to determination of GRDI-wide research priorities, and providing management and administration support, as well as support for performance management, reporting, evaluation, and communications.
Total federal funding allocated (start to end date) (dollars)	393,300,000 to March 2019. Then 19,900,000 ongoing.
Total federal planned spending to date (dollars)	393,300,000 to March 2019. 19,900,000 for 2019–20.
Total federal actual spending to date (dollars)	411,684,030
Date of last renewal of the initiative	February 2019
Total federal funding allocated at the last renewal, and source of funding (dollars)	19,900,000/year ongoing from the Fiscal Framework
Additional federal funding received after the last renewal (dollars)	Not applicable
Funding contributed by non-federal and non-governmental partners	Not applicable
Fiscal year of planned completion of next evaluation	2020–21
Performance highlights	Fiscal year 2019–20 is the first year of GRDI ongoing funding. The Initiative seeks to: 1) address shared priorities through horizontal integration and effective collaborations around interdepartmental projects; and 2) support the priorities, policies and mandates of government through concerted high calibre genomics research in areas where federal laboratories have distinct roles and competencies. The development of interdepartmental projects, while continuing to invest in mandated research, proved to be an effective mechanism to ensure continued relevance and impact of the GRDI for Canadians. The overall risk related to the funding and delivery of the GRDI program was evaluated during the planning stages of the 2019 funding renewal, and was found to be low.
Contact information	Lakshmi Krishnan Vice-President, Life Sciences National Research Council Canada 613-991-3210

Performance information

Name of initiative	Total federal funding allocated since the last renewal (dollars)	2019–20 Planned spending (dollars)	2019–20 Actual spending (dollars)	2019–20 Expected results	2019–20 Performance indicators	2019–20 Targets	Date to achieve target	2019–20 Actual results
Genomics R&D Initiative	19,900,000 /year	19,900,000	19,792,000	Federal science departments and agencies are positioned as strong genomics research contributors	GRDI publication Average Relative Citation (ARC) scores	On par or better than other genomics researchers in Canada	Data is collected through evaluations in accordance with the NRC's approved Five-year Departmental Evaluation Plan	N/A Next evaluation to be completed in 2020–21
				Research results are made available and used to inform government regulatory, policy, and/or resource management decisions	Percentage of identified end users who report having used the research for decision-making Evidence of GRDI research impacts on risk assessment, regulatory, policy, and resource management decisions (federal, provincial, municipal)	70% N/A (qualitative/descriptive): positive impact based on qualitative case study analysis	Data is collected through evaluations in accordance with the NRC's approved Five-year Departmental Evaluation Plan	N/A Next evaluation to be completed in 2020–21
				Research results are made available and used by stakeholders to support innovation in Canada	Percentage of identified stakeholders who report having used the research to support innovation Evidence of GRDI research impacts on the adoption in Canada of innovative tools and processes	70% N/A (qualitative /descriptive): positive impact based on qualitative case study analysis	Data is collected through evaluations in accordance with the NRC's approved Five-year Departmental Evaluation Plan	N/A Next evaluation to be completed in 2020–21

GRDI Shared Priorities

Lead Federal Organization	Initiative activities	2019–20 Planned spending (dollars)	2019–20 Actual spending (dollars)	2019–20 Expected results	2019–20 Performance indicators	2019–20 Targets	Date to achieve target	2019–20 Actual results
NRC (Secretariat)	Collaborative genomics R&D and supporting activities	3,980,000	3,980,000	Concerted interdepartmental research along shared priorities and common goals to address issues that are beyond the mandates of single departments	Percentage of GRDI shared priority projects managed using interdepartmental governance structures	100%	March 2020	100%
					Percentage of resources allocated to interdepartmental collaborations	20%	March 2020	20%
					Percentage of projects delivering on their objectives as planned	100%	March 2020	100%

Response to parliamentary committees and external audits

Response to parliamentary committees

There were no parliamentary committee reports requiring a response in 2019–20; the NRC did not appear before any Parliamentary Committee in 2019–20.

Response to audits conducted by the Office of the Auditor General of Canada (including audits conducted by the Commissioner of the Environment and Sustainable Development)

There were no audits in 2019–20 requiring a response.

Response to audits conducted by the Public Service Commission of Canada or the Office of the Commissioner of Official Languages

There were no audits in 2019–20 requiring a response.