“It's all about brand and how they perceive us.”
- Larry Harrington, vice president of internal audit @ Raytheon

“We have a lot to do to respond to the voice of our customers and to the voice of our stakeholders.”
- Angela Witzany, head of internal audit @ Sparkassen Versicherung AG
To start thinking visually, consider the nature and purpose of your visualization.

1. Ask yourself:
   - Is the information **conceptual** or **data-driven**?
   - Am I **declaring** something or **exploring** something?

2. Plot the Answer
LESSONS FROM THE BANK OF CANADA

1. AUDIENCE

01. Outline key messages
02. Plan Real Estate
03. Speak Strategically
04. Look Ahead
05. Tell a Story
06. Paint a picture
2019-2021 Internal Audit Plan

December 6, 2018

Our focus in 2019

Deliver assurance over foundational controls and in areas of high importance

Support strategic and transformation initiatives

Maintain quality performance

Build flexibility into prioritization and engagement delivery

Strengthen data analytics capabilities to generate insights and solve problems

We are a leading Central Bank internal audit team—trusted, agile and engaged—protecting the Bank’s interests and contributing strategically and dynamically to its excellence.
TABLE OF CONTENT

2019-2021 INTERNAL AUDIT PLAN

EXECUTIVE SUMMARY .................................................................................................................................................. 2

AUDIT PLAN FOCUS, BANK PRIORITIES AND RISK CONTEXT .................................................................................. 3

COVERAGE BY FUNCTIONAL AREA ............................................................................................................................... 6

QUALITY ASSURANCE AND IMPROVEMENT PROGRAM ............................................................................................... 7

AUDIT RESOURCES – FINANCIAL AND HUMAN RESOURCES ...................................................................................... 7

RISKS TO THE ACCOMPLISHMENT OF THE PLAN ...................................................................................................... 8

Appendices

Appendix I Full Listing of Audit Activities for 2019 and 2020-2021

Appendix II Internal Audit Coverage of Foundational Financial Reporting Controls

Appendix III Internal Audit Coverage – Past (2015-2018) and planned (2019-2021) by Function

Appendix IV Quality Assurance and Improvement Program Initiatives
EXECUTIVE SUMMARY

Our three-year Audit Plan (Plan) is influenced by the Bank’s key priorities outlined in the 2019-2021 Medium-Term Plan (MTP). Our involvement on key committees positions us to understand the business, its risks, and their evolution. Consultations with management and Enterprise Risk Management (ERM) have confirmed that our Plan is focused on current and forward-looking conditions and risks.

Our proposed activities, fully listed in Appendix I, cover areas of importance:
- providing assurance that foundational controls remain robust;
- assessing operational and IT controls for the current business and risk context;
- proactively providing strategic and value-added advisory services;
- reviewing and advising on third-party control reports on key outsourced services; and
- strengthening our Quality Assurance and Improvement Program (QAIP) to continuously monitor our effectiveness and enhance our internal audit practices.

For 2019, both traditional and new themes emerged during consultations and environmental scanning that will drive the direction of our assurance and advisory activities:
- Security, Resilience and Business Continuity – the ability to prevent, detect and recover from both cyber and physical security threats is critical given our role in the financial system as Canada’s central bank. Programs, projects, and operational areas continue to enhance processes, build resilient systems and infrastructures, and increase organizational awareness. Many assurance and advisory engagements focus on this risk area.
- Risk Management – second line of defence functions continue to develop frameworks, processes and tools that will serve to better support the Bank in managing all aspects of risk such as strategic, financial, and operational risks, including exposure from our dependency on third parties. Industry certifications and compliance attestations are becoming more common, requiring supporting assurance or advice from internal audit.
- Transformation and Renewal of Critical Systems – many system modernization initiatives are underway across the organization. Internal audit supports the preliminary identification and subsequent assessments of benefits to be realized for the larger initiatives, and, in some cases completes pre-implementation audits to assess the design of controls considering business process, information technology, and security risks.
- Data and Information Governance – data and information are important in a knowledge-based organization focused on policy development, research and innovation. At the same time, applying proper data governance, maximizing the value extracted from data, and complying with regulations are ever-present considerations. Efforts are underway to establish a governance framework, strategy, processes and infrastructures that will support timely access to high quality data, information and tools. Audit will play a key advisory role in this area throughout our Plan.

Drawing from our experience, industry best practice and our recent external quality assessment, we will also dedicate additional efforts to support:

1) Building flexibility into audit prioritization processes, and on delivering engagements using an adaptable and iterative approach.
2) Strengthening data analytics capabilities to generate insights and solve problems, for example: supporting the second line of defence in developing monitoring capabilities, enhancing audit coverage and gaining efficiencies through increased automation of audit testing, and supporting trend identification and risk insight.

Our plan will be carried out by our trusted and agile audit team complemented by consultants. We will continue to monitor risks to the completion of our plan and ensure its relevance through our involvement in committees, our relationships with management, and our partnership with the Chief Risk Officer (CRO), adjusting as needed. Any significant changes to our Plan will be proposed for review by the Office of the Governor and approval by the Audit and Finance Committee.
## Key Initiatives or Business Objectives

### Security, Resilience and Business Continuity

- There are several large programs designed to increase the Bank’s resilience and business continuity posture, as well as ongoing operations. These include Business Recovery Enhancement (BRE), Resilience for Market & Banking Operations (RMOB), Cyber Security program.
- The Continuity of Operations Incident Management and Response work stream is building capacity to lead a Bank-wide exercise.

### Risk Management

- Developing controls to comply with the SWIFT Customer Security Program whose objectives are to secure the environment, restrict access, and detect/respond to suspicious activities or incidents.
- The Bank has made a statement of commitment to the FX Global Code, which is a set of global principles supporting integrity and effective functioning of the wholesale foreign exchange market.

### Transformation & Renewal of Critical Systems

- Payments Modernization is a multi-year Payments Canada initiative to modernize Canada’s payment ecosystems. The Bank plays a systems oversight role and will modify its own systems and processes to integrate with the deployed technology.
- Strategic initiatives are underway to transform or replace aging technology: Auction Modernization (AMI), Findur Program, Centralized Cash Manager System in AOC Modernization, Enterprise Service Management Integration (ESMI) project and Partner Secure Remote Access (PSRA) for identity and access management.

### Data & Information Governance

- The Data Strategy will promote a culture of data driven decision making through investments in Big Data and advanced analytic capabilities.
- The Digital Analytic Zone (DAZ) is planned to offer a Protected-B categorized cloud environment where staff can experiment with new ideas while engaging with external vendors and researchers.
- Partnerships in Innovation and Technology Program (PIVOT) will work with the private sector and academia to experiment with digital tools and technologies, such as artificial intelligence and machine learning.

## 2019 Planned Audit Activities

### Assurance Engagements

- Vulnerability Management (2018)
- Operational Disaster Recovery Test
- Identity & Privileged Access Management – Access Governance
- Data Centre (DC3)
- BRE Early Adopter (system TBD)
- Currency Continuity of Operations

### Advisory Engagements

- BRE Monitoring
- Cyber Security Monitoring
- Corporate Security Access Management and Screening Renewal
- Continuity of Operations (COOP) review
- Physical Security Review: Calgary
- SWIFT Certification
- FX Global Code Compliance
- Financial Market Infrastructure (FMI) Resolution Governance
- Third-party Control for Activities Related to Physical Safeguarding Services
- Development of Third Party Risk Management Framework
- Payments Canada Modernization – Bank’s operations and system changes
- AMI System Implementation
- Centralized Cash Manager System Implementation
- ESMI System Implementation
- Partner Secure Remote Access (PSRA) System Implementation
- Protected B Cloud Environment
- AI translation tool pilot
- Data analytic support for Accounts Payable, Expense Claims and Procurement (P-cards)
- Records & Email Management
- PIVOT
COVERAGE BY FUNCTIONAL AREA

Before finalizing our Plan, we take into consideration the balanced coverage of key processes and activities by function/departments, as well as related risks (including risk of fraud and corruption). This includes taking into consideration second line of defence monitoring and oversight activities as well as working with, and relying on, other assurance providers.

Overall, plan-over-plan coverage outlined below is similar, with our efforts aligned with key processes and areas of risks such as information technology processes. An overview of coverage for each function is included in Appendix III.

A few key highlights:
- **Currency**: The increase is mainly attributable to the Agency Operation Centre (AOC) Modernization project that includes the Centralized Cash Manager system implementation.
- **Monetary Policy and Financial Systems**: While significantly important to the Bank, the nature of their key processes do not warrant annual audits. Coverage of main activities is planned over a three to five-year cycle.
- **Funds Management**: The increase is partially due to audits of key phases of the Auction Modernization Initiative (AMI) that are planned over 2019-2021, as well as the reclassification of the Investments audit (see Financial Services).
- **Financial Services**: We have created some efficiencies by grouping our annual audit of Investments, which was previously shown under Financial Services, with our audit of Banking Operations included in Funds Management. The prior plan also included audits of several system implementations and process improvements in Financial Services.
- **Other Corporate Admin**: Various engagements are planned supporting risk management and key operational processes across departments including Human Resources, Corporate Services and Communications.

In conclusion, based on our analysis, our 2019-2021 Plan achieves the proper balance between functional areas, and core and administrative processes. We will continue to monitor and proactively assess the changing risk profiles of these areas and rebalance our planned activities, if required.
## APPENDIX I – Full Listing of Audit Activities for 2020-21

<table>
<thead>
<tr>
<th>Foundational Financial Reporting Controls – Annual Financial Audits</th>
<th>Operational and IT Control Audits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic financial statements (GFR):</td>
<td>Priority Engagements for 2020-21</td>
</tr>
<tr>
<td>1. Investment and Loans/Foreign Banking Services</td>
<td>13. Operational Disaster Recovery Test</td>
</tr>
<tr>
<td>3. Expenditures and Other Payments</td>
<td>15. Regulatory Reporting System</td>
</tr>
<tr>
<td>4. Financial Close, Reporting and Disclosure</td>
<td>16. Enterprise Service Management Integration (ESMI) (e.g., payroll database, core payroll processes, and automation/integration)</td>
</tr>
<tr>
<td>6. Risk Notes</td>
<td>18. Information and Data Governance</td>
</tr>
<tr>
<td>10. Core Operations</td>
<td>22. Data Analytics/Continuous Auditing Proof of Concept</td>
</tr>
<tr>
<td>11. 1ST General Computer Controls of key systems and services</td>
<td>Other Engagements for 2020-21</td>
</tr>
<tr>
<td>12. Core Systems</td>
<td>23. Physical Safeguarding Services (specific procedures)</td>
</tr>
<tr>
<td>18. Data Centres</td>
<td>29. Boardroom Procedures</td>
</tr>
<tr>
<td>19. IT General Computer Controls of key systems and services</td>
<td>30. Enterprise Risk Management Assessment</td>
</tr>
</tbody>
</table>

### Advisory Activities - Strategic Initiatives and Other Areas

- 44. SWIFT Certification
- 45. Support for Retail Oversight Framework
- 46. AEC Modernization – New Note Preparatory Capabilities
- 47. Bank Note Distribution System Review
- 48. Enterprise Risk Management Assessment

*Benefits realization reviews as well as monitoring activities over initiatives and key projects as needed*

### Key activities included in our Quality Assurance and Improvement Program:

- Internal Quality Review
- Continuous Improvement Activities
  - Technology enhancements/upgrades
  - Networking/Statistical activities
- Internal Strategic Initiatives – to be defined in 2020
APPENDIX II - Internal Audit Coverage of Foundational Financial Reporting Controls

The ICFR program is under the responsibility of the Financial Policy and External Reporting (FPER) team in Finance. Internal Audit works with FPER to support the program by conducting annual audits of business processes (i.e., 100% of critical, high or medium risk processes) and both maintaining process documentation and performing testing of information technology general controls (i.e., 100% of information technology general controls). FPER performs the testing on most low-risk processes and entity-level controls.

**ENTITY LEVEL CONTROL TESTING**

- by FPER
  - Entity Level Controls
  - Internal Financial Management
  - Outsourced Service Provider Contract Controls
- by Internal Audit
  - Financial Close, Reporting & Disclosure
  - Third party control reports review

**IT GENERAL CONTROLS TESTING**

- Applications
  - SAP
  - Findur
  - High Availability Banking System (HABS)
  - Agency Inventory Management System (AIMS)
  - Notes Exchange System (NES)

- Databases
  - HANA — SAP
  - Oracle — Findur and HABS
  - SQL — AIMS and NES

- External Systems and Platforms/Third Party Assurance
  - LUTS, COBIX, ACS5 and SWIFT

- Infrastructure and Services
  - Data Centre Physical Security
  - Change Management

- Operating Systems
  - UNIX (Findur and HABS)
  - Linux (SAP and NES)
  - Windows (AIMS and NES)
**Internal Audit Coverage – CORPORATE ADMINISTRATION**

**Functional Objective:** To guide the stewardship of our physical, information, technology and financial assets and help develop our people.

### Bank-Wide
- Corporate Governance

### ELS
- Regulatory Compliance and Legal Services
- Procurement and Payments

### FIN
- Accounting and External Financial Reporting
- Budgeting and Internal Financial Reporting
- Unclaimed Balances (UCBS)

### Human Resources
- Payroll & Benefits/HR Centre (incl. pension admin)
- Talent Acquisition, Dev. and Retention
- Wellness and Employee Relations

**Planned coverage (2018)**
- Corporate Governance (2nd line of defense)
- Third-party Risk Management – Cyber
- UCBS Implementation

**Annual audit**
- Financial Close, Reporting and Disclosure
- Expenditures and Other Payments (incl. UCBS)
- Payroll and Pension
- Exchange Fund Account
- Government Debt

**Past coverage (2014-2017)**
- Code of Conduct
- Implementation of Adaptive Insights
- UCBS Adjudication Processes
- Success Factors Implementation (part of HR Modernization)

**Monitoring & advice**
- External Financial Audits - Pension, Bank, EFA, Debt

**External assurance/reports**
- 3rd party assurance:
  - Adaptive Insights
  - Pension (e.g., Morneau, CIBC Mellon)
Appendix IV: QUALITY ASSURANCE AND IMPROVEMENT PROGRAM INITIATIVES

**OPTIMIZE**
- Information Management
- Prioritization

**INNOVATE**
- Methodology
- Agile Risk Assessment & Reporting

**CONNECT**
- Relationship Management
- Observation Management

**WECU Initiatives**
- Develop 2019 WECU Plan
- Complete established EOA action plans
- Perform 2019 Internal Quality Assessment

**External Quality Assessment**
- Assess new TeamMate capabilities
- Update templates to reflect updated methodology

**Technology / TeamMate Upgrade**
- IIA—Global Financial Services Guidance Committee
- ISACA Ottawa Board—Director of Certification
- CBI Working Groups and Conferences
- Crown Corp Roundtable

### Plans 2019
- Determine key information sources
- Establish a process for risk monitoring and intelligence gathering
- Restructure Audit’s central information repository as required
- Establish an intake log
- Develop prioritization criteria
- Establish a periodic reassessment approach
- Refresh Audit Manual & Methodology
- Establish relationship management strategy & framework
- Collaborate with 2nd line of defense
- Shadow an Audit Program
- Market internal Audit via targeted presentations
- Client Collaboration Site
- Pilot client-inclusive risk assessment approach
- Standardize reporting on Strategic initiatives (including dashboard for audit’s advisory work)
- Formalize Agile project audit methodology
- Pilot observation tracking with clients
- Deploy observation tracking across Bank

### Pressures
Accomplishing the above-listed initiatives is highly dependent on having adequate capacity as completing the Audit Plan is our top priority. Vacancies and new requests are sources of pressure that we will monitor through regular Audit leadership meetings. We will adjust our efforts as needed to focus on areas of highest risk and impact and will inform Bank senior leadership and the Audit and Finance Committee of any needed changes.
Examples of Charts from our Progress Reports and Annual Report

Figure 1. Status of Planned Engagements

- Not Started
- Planning
- Fieldwork
- Reporting
- Completed

Figure 2. 2019 YTD versus Planned Effort at March 31, 2019 (in days)

- Quality Assurance and Improvement Program
- Strategic Initiatives and Advisory Activities
- Operational and IT Control Audits
- Foundational Controls

Figure 3. Status of Action Plans

- Delayed
- Progressing as Planned
- Completed

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<tr>
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<tbody>
<tr>
<td>Delayed</td>
<td>34</td>
<td>22</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Progressing as Planned</td>
<td>19</td>
<td>37</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Completed</td>
<td>64</td>
<td>163</td>
<td>89</td>
<td>89</td>
</tr>
</tbody>
</table>
Figure 5. Results of Audit’s WECU Pulse Check Survey in areas of Engagement, Leadership and selected Departmental Questions

Engagement

Leadership

Departmental

- Significant Improvement
- Visible Improvement
- Some Improvement
- Very Little Improvement
- No Improvement Required