

2020



Report of the Auditor General of the Ville de Montréal

For the Year Ended December 31, 2020
to the City Council and to the Urban Agglomeration Council

Report of the Auditor General of the Ville de Montréal



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Please note that this English report has been translated from the original French version. In case of doubt or difference of interpretation, the French version shall prevail over the English.

According to the *Charter of the French Language* and the *Office québécois de la langue française*, municipalities shall designate all official names, such as boroughs, departments, paramunicipal corporations as well as municipal and associated bodies by their French names alone, even in the English version.

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June 11, 2021

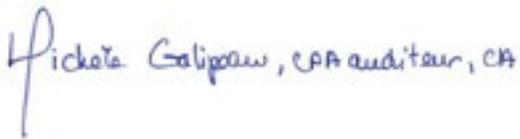
Mrs Valérie Plante
Mayor of the Ville de Montréal
275, Notre-Dame East
Montreal, Quebec H2Y 1C6

**Subject: Auditor General of the Ville de Montréal's Annual Report
for the year ended December 31, 2020**

Dear Mrs Mayor,

Please find enclosed my Annual Report, for the year ended December 31, 2020, as per Section 107.13 of the *Cities and Towns Act* (CQLR, chapter C-19), for deposit at the next ordinary meeting of the Municipal Council, that of June 14, 2021, and of the Agglomeration Council, that of June 17, 2021.

Yours truly,



Michèle Galipeau, CPA Auditor, CA
Auditor General

MG/dds



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1.

Observations of the Auditor General

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



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1. Observations of the Auditor General

This report is the fifth of my seven-year term. In addition to being conducted during an extraordinarily difficult period in terms of work organization, the report is the result of a gigantic achievement by the team of the Bureau du vérificateur général (BVG). I wish to thank all the team members for their support, flexibility and desire to deliver a quality product. The BVG is dedicated to delivering “**an objective and independent look at the quality of the management of public funds.**”

Five-year Trends

Trends have emerged from the various audits completed over the past five years. Beyond the piecemeal implementation of the recommendations, there are common issues that must be explored by the Ville de Montréal (the City) in a comprehensive approach to developing solutions aimed at improving its management of public funds.

1.1. Accountability

Last year, I indicated that more than 60% of the reports issued during the years 2016 to 2019 contained recommendations aimed at improving accountability. This trend continued in 2020, with recommendations to this effect in nearly 59% of the reports issued. Over a period of five years, more than 61% of reports and 48 recommendations dealt with improvements to accountability.

Good and timely accountability provides a better vision of operations, lends itself to more informed decision-making and, as a result, allows the City to take the necessary corrective measures to meet its commitments to citizens and reassure them about how public funds are being managed.

1.2. Documentation

In the past five years, we issued recommendations in 39% of our reports aimed at improving the documentation of actions taken and processes used by the business units. Such documentation ensures continuity and standardization in implementing actions when there is staff turnover (e.g., retirement, job changes, extended leave) and preserving the traceability of the actions performed.

1.3. Data Control Mechanisms

In 35% of our reports, we also made recommendations regarding the implementation of control mechanisms for data generated and used by the business units in the performance of their activities. This data can be used to evaluate progress or performance, guide decision-making about a project or strategy, or provide accountability to elected officials or information to citizens. It is crucial that the data be complete and representative of what has been measured or achieved.

1.4. Legal and Regulatory Compliance

The City has policies and by-laws that provide a framework for its activities and reflect its management decisions, while ensuring compliance with the law. In 35% of our reports over the past five years, we noted shortcomings in the way business units followed the City's policies and by-laws and complied with provincial regulations related to their various activities.

1.5. Summary of the Audits Conducted in 2020



1.5.1. Financial Audit

Clearly the pandemic had an impact on our timelines and on our method of conducting our audits of the City and agencies of the reporting entity that we deemed it appropriate to audit.

Against this unusual backdrop, the “Emergency Assistance Program for Small and Medium-Sized Businesses” and the “Assistance Program for Businesses in Regions under Maximum Alert” were set up by the Québec government. The City entrusted six agencies in the PME MTL network with managing this program and granting \$67.1 million in financial assistance to companies as of December 31, 2020. An audit was performed in coordination with the agencies and their auditors.

In addition to this, one of the elements complicating our audit for the year 2020 was the application of the stricter requirements of the revised CSA 540 *“Auditing Accounting Estimates and Related Disclosures.”* More specifically, as part of applying the CSA 540’s new terms, the City undertook a review of the estimates of the useful life of its capital assets. This resulted in a major increase in the useful life of several categories of capital assets and, consequently, a downward adjustment of \$223 million in the depreciation expense. We had issued a recommendation in this regard in 2016. This recommendation has remained unresolved for four years.

I issued unqualified auditor’s reports jointly with the external auditor of the City’s consolidated financial statements as of December 31, 2020, as well as a spreadsheet of combined expenses. In addition, six joint auditor’s reports were produced of the financial statements of December 31, 2020, for the following agencies: the Société de transport de Montréal (two reports), the Société d’habitation et de développement de Montréal, the Société du parc Jean-Drapeau, the Agence de mobilité durable, and Transgesco.

A detailed summary of the financial audits can be found in Chapter 2.

1.5.2. Performance and Information Technology Audits

The full reports of the performance and information technology audits presented below can be found in chapters 3 and 4 of this report.

Pre-Election Report and Budget Process

PRE-ELECTION REPORT

This file, which was opened in January 2018 in response to a verbal request, was followed by the city council resolution of August 19, 2019, requesting that the auditor general conduct an audit of the Pre-Election Report (PER) produced by the Service des finances (SF), more than 18 months after we issued a reply on this matter. The prototype of the PER was received on June 23, 2020.

The analysis of the prototype of the report, dated June 23, 2020, led us to conclude that, while we have both the expertise and the ability to carry out this type of mandate, it is clear that the report prototype that we received at the end of June 2020 and the files that support it do not allow us to express an opinion. Indeed, the conditions that would allow us to draw conclusions based on suitable criteria supporting the objectives of a Pre-Election Report and to obtain sufficient relevant evidence necessary to support our conclusions were not present.

Following a presentation of the results of our analysis, the Audit Committee, at the city council meeting of November 2020, tabled a document recommending withdrawal of the request for the SF to produce a PER to be audited by the auditor general. Despite this, city council maintained the request for the SF to produce a 2022–2024 budget framework between now and August 31, 2021, but it will not be audited. The same presentation was made in a plenary session to city council on January 26, 2021.

The entire supplementary budget of \$900,000 allocated by city council for this audit was withdrawn. Expenditures of \$500,000 incurred for this dossier were assumed by the BVG's budget.

Since the start, in January 2018, we have pointed out the impact of this dossier, especially the scope of the work to be done over the next three and a half years. Internal resources were freed up, and experts were consulted to support us in this audit. I also tabled a follow-up report to city council in February 2020 expressing my concern about the progress of this file.

The introduction of a PER is a colossal undertaking that is not to be underestimated. In order to be able to present a PER with high-quality financial information that complies with the prescribed requirements, the processes that support the production of PER need to be adequate, effective and rigorous, and the internal experts assigned to this task must be appropriate as well.

Nevertheless, the audit of the major budgetary processes dealing with revenues and expenses continued. Implementing the improvements recommended in this report is advisable if the City wishes to have a PER that complies with the requirements and represents a budget transparency tool that enables political parties to present programs that align with the City's financial situation.

The follow-up of the PER can be found in Chapter 7.3.

BUDGETARY PROCESS – OPERATIONAL COMPONENT AND MANAGEMENT OF THE SBA APP

In a municipal setting, the budget represents a vehicle for communication that allows the City to inform the population of orientations taken and strategic choices made to establish the level of taxation and the level of service of the various municipal activity sectors, and to allocate resources accordingly.

For the fiscal year 2021, the City adopted an operating budget of \$6.17 billion, of which 64.7% of activities are funded by taxation revenue of \$4 billion. For expenses equivalent to revenues, compensation alone represents \$2.5 billion, or 40.9% of the total budget. The second major component of the budget corresponds to servicing the gross debt, which is \$1.1 billion, or 17.2% of the planned expenditures in 2021.

The City has a management framework specific to the budgeting process and formal decision-making mechanisms regarding the orientations established to achieve a balanced budget. We found, however, that the draft financial framework is focused on the following year's budget. It is not followed by a balanced five-year financial framework that would expose the risks and challenges of current projects, which is essential in a situation in which the City's structural budget imbalance is increasing.

The budgetary process is not part of a comprehensive planning process. The organizational priorities communicated by the Direction générale serve as a backdrop, without the budget of the business units being necessarily established based on these, their activities or the level of service.

The current method for determining the orientations and budget envelopes of the business units relies instead on managing disparities between revenues and expenses compared with the budget adopted the previous year. While certain forecasts have been made, our audit revealed overestimates and underestimates from year to year in some categories of revenues and expenses. This leads to discrepancies carried over from year to year and compromises the accountability of the business units.

While the central transfers granted to the boroughs have been the subject of certain adjustments, they have not been reassessed in depth since the 2014 reform of their funding to determine whether they accurately reflect current needs and whether the parameters used are still appropriate. The funding model should be reviewed after five years.

As well, the published information does not allow for any assessment of the City's budgetary performance; it deals with only one year, making it impossible to know the trend of the discrepancies between the forecasts and the historic results.

The preparation of the City's operating budget, totalling \$6.17 billion, rests in large part on a multitude of Excel files and outdated applications that are no longer supported by the service providers and that, over time, have required the implementation of compensatory controls to mitigate risks.

The main budget app used by the City, SBA, was developed in the early 1990s and is technologically outdated. To avoid the loss of data integrity and the availability of the app, control mechanisms need to be improved regarding documenting roles and responsibilities, password settings, access monitoring, and management of changes and incidents.

It is imperative that the City review its budgetary process and adopt high performance budget and financial systems so that it is better equipped to face current and future issues.

The conclusions of our audit of the budgetary process and SBA app can be found in chapters 4.1. and 4.2. of the report.

Street Lighting System Upgrade

The City undertook a massive project to replace the City's approximately 132,000 high-pressure sodium bulbs illuminating the City's streets and sidewalks with light-emitting diodes lights. The purpose of the project was to reduce energy consumption by at least 50% and maintenance costs by 55%. In addition, the City wanted to install a smart communication system for the lights so that it could monitor their condition remotely in real time. In 2015, the central city proposed to take responsibility for the light conversion for all 19 boroughs, and contracted a private firm to manage the project, purchase equipment for the smart system and outsource the work of installing lights to three subcontractors. The City, for its part, handled the purchase of LED lights. The total authorized budget for all this work was \$110 million.

To date, the street light upgrade has enabled the City to achieve energy savings that exceeded the 50% expectations. However, these savings are based on data generated by the firm managing the project then transferred to the City, without any validation by the City. We also did not obtain evidence from the City that it has the necessary information to show that it has achieved maintenance savings of approximately 55% as a result of the street light conversion. What is more, the City was paying for repair work that the boroughs should have done, and in other cases, the boroughs themselves were doing the repair work without allowing the equipment supplier to honour the clauses dealing with equipment quality in the contract for the purchase of lights and their attendant warranties and without claiming the compensation to which it is entitled under these contracts.

Organic Waste Treatment Plants

In order to respond to the *Plan directeur de gestion des matières résiduelles de l'agglomération de Montréal 2010-2014* (PDGMR) and become self-reliant in organic waste management, the Ville de Montréal (the City) undertook studies in 2006 that led it, in January 2013, to present to the executive committee (EC) a massive project for the construction and commissioning of five Organic Waste Treatment Plants (OWTPs) including a Centre pilote de prétraitement (CPP). The cost of the project presented to the EC was approximately \$237 million, for which the City anticipated that it would obtain approximately \$130 million in grants from the federal and provincial governments. All but one of the OWTPs was to be operational by the end of 2016; one OWTP was to be operational in 2021.

In 2018, the required investment grew to \$589 million. In 2019, the City's EC authorized the granting of two contracts for the production of the West and East OWTPs at a cost of \$298.5 million. The decision involved replanning the production of two other OWTPs and the CPP at unspecified future dates. As a result of delays in the project, the City could not obtain all the grants initially anticipated and is now under the obligation to negotiate new agreements with the governments. Thus, in 2020, as a result of increased project costs and reduced grants, the projected net cost of the project for the City should be between \$162.9 million and \$196.9 million

and, as a consequence, might be nearly twice the amount that had been projected six years earlier for the five facilities, while only two will be produced by the end of 2021.

In light of this overall finding of cost overruns and non-compliance with the timeline, which could have a considerable impact on the total grants originally anticipated from the federal and provincial governments, and considering that the Cadre de gouvernance des projets et des programmes de gestion des actifs municipaux (“Governance Framework”) was not complied with completely, and that monitoring and the different accountability reporting processes are incomplete, we conclude that the OWTP construction project was not subject to a sufficiently rigorous process, given the complexity and scope of the project.

Follow-up of Requirements for the Management of Large-Scale Projects and Programs

In 2010, the City created a Cadre de gouvernance des projets et des programmes de gestion d’actifs municipaux (hereinafter the “Cadre de gouvernance”) to guide the management of large-scale projects (hereinafter the “Projects”) and programs (hereinafter the “Programs”) that, annually, require tens, if not hundreds, of millions of dollars in investment to be completed.

Since implementation of the Cadre de gouvernance, the identification criteria for Projects and Programs have evolved and are disseminated on the Bureau des projets et programmes d’immobilisations (BPPI) Intranet. However, these do not match those in the Cadre de gouvernance, and nothing specifies which prevail. As well, the criteria in place do not allow for identification of some Programs until they have reached the completion phase. Since they were not identified in a timely manner, these Programs did not appear before the governance committees from the start of their life cycle. Although the project management approach appears to be structured, the BPPI does not seek to assure itself of this entirely. As well, it does not exercise any systematic control over the comprehensiveness of the documents produced by the business units before they are presented to the governance committees. Finally, reporting on the monitoring of Projects and Programs is not done on a regular basis to the governance committees, nor any progress report on Projects (content, budgets and timelines) based on the initial parameters.

Management of Lead Service Line Replacements

In 2007, in order to meet the government’s drinking water quality and public health requirements regarding lead in drinking water, the Ville de Montréal (the City) filed a plan to replace all lead service lines (LSLs), which called for the elimination of all LSLs (estimated in number at 69,000) by 2026. In 2019, in response to Health Canada’s change in the standard for the allowable concentration of lead in drinking water, and at the request of the Québec government, the City tabled a revised Action Plan (AP) to eliminate all LSLs by 2030. This revised plan provides for new actions, including accelerated screening.

It is estimated that, as of December 31, 2019, approximately 21,000 of the 69,000 LSLs had been replaced. Between 2007 and January 2020, close to 39,000 buildings were tested. The 2019 AP calls for the screening of another 100,000 buildings. However, this number has increased considerably since the revised AP was approved, to reach somewhere around 140,000 buildings. In addition, there are approximately 21,000 buildings for which the public section of the LSL has been replaced and that need to undergo an analysis to determine whether there are any LSLs in the private section.

While the initial AP was approved in 2007 by the Québec government, we note that the information available on the progress of the elimination of LSLs does not provide us with an overall picture of the situation that could be used to make informed decisions and to properly inform the public. Thus, we note that the replacement of LSLs has not progressed as planned in the AP. In addition, we did not find evidence that the regulations respecting the elimination of LSLs were systematically applied as required. In order to fully implement the AP, considerable work remains to be done and, as a result, the City must review existing management practices to accelerate the pace of LSL screening and replacement activities.

Management of Rolling Stock Maintenance (Excluding Public Safety Vehicles)

The delivery of a multitude of services to citizens by the business units (clients of the Service du matériel roulant et des ateliers (SMRA)) depends on the availability of a vehicle fleet in good working condition. Managing the maintenance of the City's 8,200 vehicles and equipment is spread out among 27 mechanical workshops whose operating budget is more than \$60 million annually out of a total budget of approximately \$110 million. In 2017, these activities were grouped under the SMRA. The Service de l'approvisionnement (SA) is responsible for ensuring the availability of the parts and materials required for the maintenance activities of the SMRA's workshops.

The management of the SMRA's rolling stock maintenance has several shortcomings, especially at the level of the comprehensiveness of the information on the vehicles, the consistency of preventative maintenance planning, which is behind schedule, and the documentation of interventions and associated costs. Planned interventions do not reflect all the operational requirements of the business units and are not adjusted according to the capacity of the workshops. The SMRA's operations are not aligned with those of the SA to ensure the timely availability of the products required for the interventions. The control mechanisms and management reports required to track implementation of the interventions and monitor compliance with the regulation are not available. The implementation of PMP inspections and corrective maintenance on the HVs, as well as the CCs performed by the drivers in the boroughs, contain failures to comply with the applicable regulation. The tracking of costs and the performance evaluation of the management of rolling stock maintenance are flawed due to a lack of reliable data, objectives and indicators. Annual accountability fails to mention the operational management of the workshops or the regulatory compliance of the HVs. Almost four years after the centralization of these activities, no follow-up has been done of the objectives to be achieved.

Information Technology Risk Management

Information technology (IT) risk management is a continuous process that generally involves the business units (the owners of most of the information assets) and the Service des technologies de l'information (STI). An IT risk is an event, involving IT, that could have a negative impact on the City, such as the loss or theft of confidential information, the inaccessibility of major apps, non-compliance with laws and regulations, or financial loss following a cyber attack (e.g., ransomware).

The STI put in place a team responsible for supporting the City's technological risk management. This team has made significant progress in this area. Nevertheless, the STI does not have the human and technical resources needed to manage IT risks to ensure adequate delivery of its service offering. Governance of IT risk management is not sufficiently framed with complete, up-to-date and approved documentation, disseminated to the stakeholders and applied by them. Although the mechanism for detecting technological risks is documented in the IT risk management process, it is not applied.

This situation increases the likelihood that the quality of IT risk management is uneven from one business unit to the next, and from one stakeholder to the next, and that major IT risks are not adequately detected, dealt with and followed up.

Geomatics Systems Management

Geomatics includes the set of tools and methods used to acquire, represent, analyze and integrate geographic data. The term "geomatics" is derived from the contraction of the words "geography" and "informatics." Geomatics is closely related to the geographic information that represents an object or phenomenon in space.

Geomatics has extremely numerous fields of application, such as surveying, topography, urban planning, snow clearing and traffic signal operations.

Overall, we concluded that the City has established several control mechanisms that ensure sound geomatics systems management.

Contributions Granted for Development Projects of Montréal Museum of Archaeology and History, Pointe-à-Callière

Inextricably tied to its location, the Pointe-à-Callière Montréal Archaeological and History Museum (the Museum) owes its existence to major archaeological discoveries made in the 1980s in Old Montréal. Opened in 1992 as part of the festivities surrounding the 350th anniversary of Montréal, the Museum is the only large archaeological museum in Canada. It is also the largest and most visited history museum in Montréal.

Since 2011, the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière (the Société), has obtained nearly \$77 million in grants for the Museum's development projects. Of this amount, more than \$53 million came from the City, ranking the Société as one of the City's most subsidized bodies in 2018 and 2019, among the legal persons outside of the City's reporting entity. These funds are used to complete projects aimed at enhancing the Museum. They come out of the

operating budget of the Service de la culture, which is responsible for managing the contribution agreements specific to the projects in the Société's Three-year capital works program.

The City has not always done a proper follow-up to ensure compliance with the contribution agreements, making it difficult to validate whether the funds awarded were used for their intended purpose. Our audit identified a lack of compliance with certain clauses, regarding, in particular, separate and adequate accounting for the Fort Ville-Marie and William Collector projects, the quality of the information contained in the cost reports, and application of the city council by-law on contract management. Finally, we noted that approval for granting contracts was delegated to a committee of the Société's board of directors, without any rendering of accounts to the board.

We also noted that some costs were claimed after the agreement expired, and that unused funds were transferred to fund other projects without prior formal approval. Although the Service de la culture monitors the Société regularly, accountability reporting is not done in a timely manner, leaving the Service de la culture with a fait accompli once the amounts are spent.

1.6. Accountability

1.6.1. Legal Persons Having Received a Subsidy of at Least \$100,000 from the Ville de Montréal

For the year ended December 31, 2019, the City recorded a total of \$190.6 million in subsidies to various legal persons. Of this amount, \$161.9 million (or 85%) concerned 243 legal persons that had received subsidies totalling at least \$100,000, which were subject to the requirements of Section 107.9 of the *Cities and Towns Act* (CTA) and resolution CM13 1157 adopted by city council.

Considering the current public health crisis, we stopped our follow-up belatedly this year, i.e., on February 12, 2021. As of that date, the BVG had received the 2019 audited financial statements of 242 (or 99.6%) of the 243 entities concerned by this requirement of the CTA, for a total of \$161.7 million. Only one entity, which had received \$204,300, had not met the requirements of the CTA and resolution CM13 1157, having ceased its operations during the course of 2019.

I encourage the City to continue its work to educate organizations about the requirements of section 107.9 of the CTA and resolution CM13 1157.

Chapter 6.1. deals with the work done by the BVG to ensure the agencies' compliance with the laws.

1.6.2. Application of the Auditor General's Recommendations

Following up on the implementation of the recommendations we make is an integral part of the work of the BVG. These recommendations are aimed at helping the municipal administration fully discharge its responsibilities and contribute to improving the business processes, while fostering a better use of resources.

During 2020, the comptroller general put in place mechanisms to follow up on the actions taken by the business units to improve the efficiency of their implementation in a timely manner. The Audit Committee held meetings with the business units to monitor the actions taken regarding the timely implementation of their APs. We also reviewed some of our practices, in particular by extending the period allowed for business units to submit action plans by three months.

Results

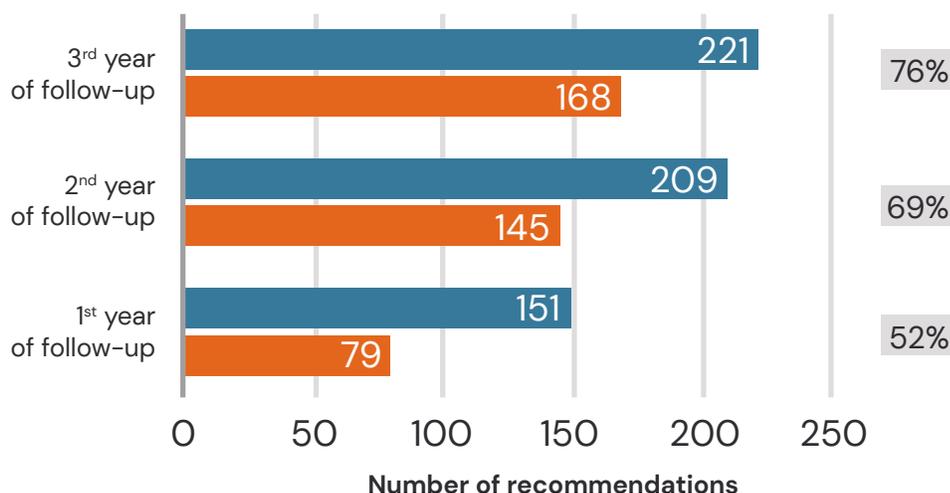
Compared with the two previous years, when I observed a low percentage¹ of recommendations resolved versus those unresolved in the first year following publication of the audit report based on the APs developed by the business units, this year's percentage sits at 52%. This improvement was seen not only in the financial audit but also in the performance, compliance and information technology audits. This leads me to say that the actions taken to date by the municipal administration to follow up on the implementation of the APs is beginning to bear fruit.

While 76% of the recommendations followed up in year 3 have been resolved, this should have been close to 100%, given that most of the business units' APs had maximum timelines of three years. This is why I feel that, despite the improvements observed, there is still work to be done to implement all the recommendations made to the business units.

Furthermore, this year once again, I found recommendations outstanding that the business units considered to have been resolved, several APs still awaiting action even though the planned implementation date had passed, and initial action plans expired more than five years ago, even 10 years in some cases.

¹ The percentage of recommendations resolved after the first year for the performance, compliance and information technology audits was 32% in the 2017 report and 34% in the 2018 report; for the financial audit, it was 25% in the 2017 report and only 8% in the 2018 report.

Percentage of implementation of Recommendations as of February 28, 2021

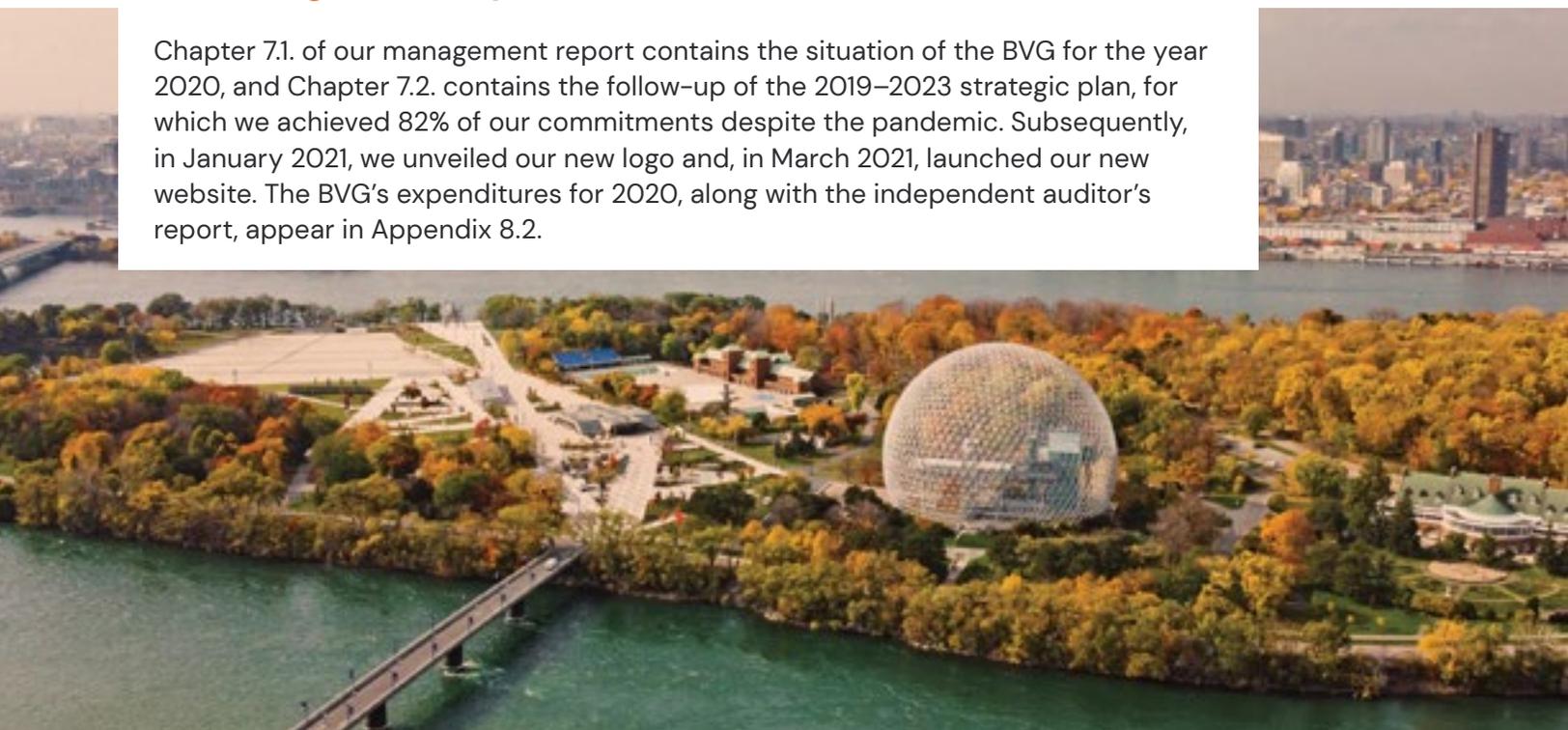


- Number of recommendations to be resolved according to initial action plans provided by business units
- Number of recommendations resolved according to the Bureau du vérificateur général

Detailed results of the application of the recommendations can be found in Chapter 6.2.

1.7. Management Reports

Chapter 7.1. of our management report contains the situation of the BVG for the year 2020, and Chapter 7.2. contains the follow-up of the 2019–2023 strategic plan, for which we achieved 82% of our commitments despite the pandemic. Subsequently, in January 2021, we unveiled our new logo and, in March 2021, launched our new website. The BVG’s expenditures for 2020, along with the independent auditor’s report, appear in Appendix 8.2.





2.

Financial Statement Audits and Other Reports

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



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2. Financial Statement Audits and Other Reports

2.1. Introduction

The *Cities and Towns Act* (CTA) no longer subjects the Auditor General to the obligation of conducting the financial audit of the Ville de Montréal (the City), paramunicipal bodies, the breakdown of mixed expenditures and the overall tax rate, but he may continue to do so if he deems it appropriate. We still consider it appropriate to continue our financial audits of the City and the breakdown of mixed expenditures. For paramunicipal bodies, we maintained our strategy, which was to use a risk assessment matrix to assess entities for which the Auditor General deemed it appropriate to continue conducting audits and, consequently, to conduct a co-audit with the external auditor appointed by the City.

The Auditor General conducts audits in accordance with Canadian generally accepted auditing standards. The audit is planned and performed to provide reasonable assurance that the financial statements are free of material misstatement. It involves implementing procedures to obtain evidence about the amounts and information provided in the financial statements. An audit also includes assessing the appropriateness of the accounting methods used and the reasonableness of accounting estimates made by management, as well as assessing the overall presentation of the financial statements.

The Auditor General's audit of the financial statements does not in any way relieve management of its responsibilities, which include the preparation and fair presentation of the financial statements in accordance with the applicable accounting framework and the internal control it considers necessary to enable the preparation of financial statements that are free of material misstatement.

The work done on the risk of fraud by the Bureau du vérificateur général as part of the audit of the financial statements does not relieve the management of the City and of the organizations subject to section 107.7 of the CTA of their responsibility for the prevention and detection of fraud. Therefore, due to the limitations inherent in the financial audit, the risk that some material misstatements resulting from the risk of fraud are not detected remains despite the fact that the audit work has been planned and performed in accordance with Canadian Auditing Standards (CAS).

2.2. Consolidated Financial Statements of the Ville de Montréal

In accordance with the provisions of the CTA in force on December 31, 2020, to the extent deemed appropriate by the Auditor General, we audited the City's financial statements.

The *Charter of Ville de Montréal, Québec's Metropolis* (Charter of Ville de Montréal) and the CTA both require the City to submit its financial statements to the Service du greffe by March 31 following the close of the preceding year and to the Ministère des Affaires municipales et de l'Habitation (MAMH) in the prescribed form, before May 15. In the context of the COVID-19 public health crisis, the MAMH will apply administrative tolerance with regard to the deadline to submit the financial report up to June 30, 2021.

The audit of the financial statements was planned and performed jointly with Deloitte, the independent auditor appointed by the City. Doing this work together avoids duplication of work and costs for the municipality.

The consolidated financial statements include the activities of organizations belonging to the City's reporting entity. The inclusion of an organization in the reporting entity is based on the concept of control, that is, the power to direct the financial and administrative policies of another organization so that its activities will provide the expected benefits to the municipal organization or expose it to a risk of loss. These organizations are the Société de transport de Montréal (STM), the Société d'habitation et de développement de Montréal (SHDM), the Société du parc Jean-Drapeau (SPJD), the Conseil des arts de Montréal, the Office de consultation publique de Montréal (OCPM), Anjou 80, the Société en commandite Stationnement de Montréal (SCSM), the Agence de mobilité durable (AMD), the Bureau du taxi de Montréal (BTM) and BIXI Montréal.

On May 10, 2021, jointly with Deloitte, we issued an unqualified auditors' report on the consolidated financial statements of the City as of December 31, 2020.

The auditor's report on the City's consolidated financial statements and the report on mixed expenditures are included in the annual financial report filed with the City's Service du greffe on May 12, 2021.

In addition, joint auditors' reports on the City's consolidated financial statements and on the breakdown of mixed expenditures will be produced and recorded on the form required by the MAMH. In accordance with the provisions of the CTA, the form required by the MAMH, along with the two aforementioned joint auditors' reports on the consolidated financial statements, will be filed with city council and the urban agglomeration council before being sent to the MAMH in June 2021.

Highlights of the Audit for the Year Ended December 31, 2020

The process of auditing the financial statements of December 31, 2020, was complicated by the fact that two key issues had to be addressed: implementing revised CAS 540, *Auditing Accounting Estimates and Related Disclosures*, and the granting of emergency loans to small and medium-sized businesses in the context of COVID 19 through six PME-MTL which are legally constituted as legal persons.

In the process of reviewing the revised CAS 540, *Auditing Accounting Estimates and Related Disclosures*, the City revised its estimates of the useful lives of its capital assets, leading to a downward adjustment of depreciation expenses amounting to \$223 million a year. However, we issued a recommendation in this matter in 2016, and for the past four years it has remained unresolved.

These loans to PME-MTL required coordination with these organizations and their auditors. As of December 31, 2020, \$67.1 million had been granted under the “Emergency Assistance for Small and Medium-Sized Businesses” (EASMSB) program and the “Assistance for Businesses in Regions Under Maximum Alert” (ABRUMA) component.

Coupled with this is the fact that in 2020–2021, all work was done remotely.

Organization and Governance of Public Transit in the Montréal Metropolitan Area

For the year ended December 31, 2020, the status quo was maintained in terms of the governance of the STM, since the 2017–2019 agreement between the Autorité régionale de transport métropolitain (ARTM) and the STM expired on December 31, 2019. We will review the new agreement and analyze its impacts in the light of the existing legislative and contractual framework and any new ways of working that may exist. Management must assess the impacts that could result from this new agreement.

Mixed Expenditures

Under the *Act respecting the exercise of certain municipal powers in certain urban agglomerations* (CQLR, chapter E-20.001), completed by the *Montréal Agglomeration Order* (order-in-council 1229-2005) as subsequently amended, expenditures incurred by the City in the performance by the municipal administration of an act that comes under both urban agglomeration power and another power are considered mixed expenditures. They are broken down between local and agglomeration powers in accordance with the criteria established by management pursuant to by-law RCG06 054 adopted by the urban agglomeration council on December 13, 2006, and its subsequent amendments.

Jointly with Deloitte, we conducted the audit of the table of mixed expenditures incurred by the City broken down by local and agglomeration powers. On May 10, 2021, we produced an unqualified joint report indicating that the breakdown of mixed expenditures meets compliance requirements in all material respects.

Other Reports

On June 19, 2020, the Auditor General and Deloitte sent a report to management and the City's Audit Committee that consolidated deficiencies in internal control and contained observations related both to Information Technology General Controls (ITGC) that were identified during the audit of financial statements as of December 31, 2019, and to follow-up on deficiencies reported in previous years. Deficiencies in internal control and ITGC observed during the audit of financial statements as of December 31, 2020, and the follow-up to previous deficiencies had not been presented to the Audit Committee at the time of publishing this report.

Summary of Recommendations

Over the years, we issued a series of recommendations within the scope of the financial audit of the City. The following table provides a summary of the unresolved recommendations for each major area as of December 31, 2019.

TABLE 1

Recommendations Still In Progress for Each Process for the Year Ended December 31, 2019

Recommendations	Number of Recommendations per Year					Total
	2015	2016	2017	2018	2019	
Information technology (financial application)	-	-	1	3	1	5
Capital assets process	-	3	-	-	2	5
Purchasing process	3	1	-	-	-	4
Process for establishing provisions and depreciating assets or liabilities	-	-	1	2	1	4
Revenue process	-	-	-	3	1	4
Transfer revenue process	-	-	-	1	-	1
Transfer payment process	-	-	1	-	-	1
Fair market value assessment process	-	1	-	-	-	1
Financial information process	-	1	1	-	1	3
Total recommendations still in progress as of December 31, 2019	3	6	4	9	6	28

2.3. Financial Statements of Other Legal Entities Subject to the *Cities and Towns Act*

Pursuant to sections 107.7 and 107.8 of the CTA, the Auditor General must, to the extent deemed appropriate, audit the financial statements of the other legal persons covered by the CTA who meet any of the following conditions:

- It is part of the reporting entity defined in the municipality's financial statements;
- The municipality or a mandatary of the municipality appoints more than 50% of the members of the board of directors;
- The municipality or a mandatary of the municipality holds more than 50% of the outstanding voting shares or units
- Any body covered in the first paragraph of section 573.3.5 of the CTA when any of the following conditions is met:¹
 - i) its budget is adopted or approved by the municipality;
 - ii) more than half of the body's funding is secured by funds from a municipality and its annual revenues are equal to or greater than \$1,000,000;
 - iii) it is a mandatary or agent of the municipality or is designated by the Minister of the MAMH as being subject to municipal contractual regulations and its main place of business is on the territory of the municipality.

The following table identifies the other legal persons covered by the CTA for which, following our risk assessment, we deemed it appropriate to continue the financial audit work and produce a joint report on the financial statements with the auditor appointed by the City.

¹ Amended in December 2019, thereby offering the possibility of going back two years.

TABLE 2

Legal Entities Subject to Section 107.7. of the *Cities and Towns Act* for which the Auditor General has Deemed it Appropriate to Continue the Financial Audit Work as of December 31, 2020

Other legal entities subject to the <i>Cities and Towns Act</i>	Reporting entity	Date of the auditor's report for the fiscal year ending December 31, 2020
Société de transport de Montréal (Financial report and form required by MAMH)	●	April 7, 2021
Société d'habitation et de développement de Montréal	●	March 30, 2021
Société du parc Jean-Drapeau	●	March 25, 2021
Agence de mobilité durable	●	April 16, 2021
Société en commandite Transgesco	(1)	March 25, 2021

(1) Subsidiary of the Société de transport de Montréal.

Société de transport de Montréal

The STM was incorporated under the *Act respecting public transit authorities* (CQLR, chapter S-30.01).

Its mission is to provide the ARTM with the public transportation services covered by an agreement concluded under section 8 of the *Act respecting the Autorité régionale de transport métropolitain* (chapter A-33.3) and collaborate, at its request, in the planning, coordination, development, support and promotion of public transportation.

Report

On April 7, 2021, we issued an unqualified joint auditors' report for this organization.

This is an extract from the report:

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the STM as of December 31, 2020, and the results of its operations, changes in its net debt and cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Société d'habitation et de développement de Montréal

The SHDM is a non-profit organization that reports to the City, incorporated by letters patent on June 15, 2010, by the Government of Québec pursuant to chapter V of schedule C of the *Charter of Ville de Montréal* (CQLR, chapter C-11.4).

Its objectives are:

- to contribute to economic and social development through the enhancement of residential, institutional, industrial, commercial and cultural property assets in the City's territory;
- to acquire, renovate, restore, build, demolish, sell, lease or administer buildings in the City's territory;
- grant subsidies and administer programs for the construction, renovation, restoration, demolition and relocation of buildings in the City's territory.

Report

On March 30, 2021, we issued an unqualified joint auditors' report for this organization.

This is an extract from the report:

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the SHDM as of December 31, 2020, and the results of its operations, revaluation gains and losses, changes in its net debt and cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Société du Parc Jean-Drapeau

The SPJD is a non-profit organization that was incorporated on August 9, 1983, under section 223 of the Charter.

Its purpose is to operate, administer and develop SPJD, which includes Sainte-Hélène and Notre-Dame islands in Montréal. It manages recreational, cultural and tourist activities and carries out any other mandate entrusted to it by the City.

Report

On March 25, 2021, we issued an unqualified joint auditors' report for this organization.

This is an extract from the report:

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the SPJD as of December 31, 2020, and the results of its operations, changes in its net financial assets and cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Agence de mobilité durable

The AMD is a non-profit organization that was incorporated on February 21, 2019, under section 220.4 of the Charter.

The mission of the AMD is to ensure the management, regulatory enforcement and development of paid on-street and off-street parking throughout the City's territory.

Report

On April 16, 2021, we issued a joint auditors' report without reserve for this organization.

This is an extract from the report:

Opinion

In our opinion, the financial statements present fairly, in all material aspects, the financial situation of the AMD as of December 31, 2020, and the results of its operations, changes in its net financial assets and cash flows for the year then ended, in accordance with Canadian public sector accounting standards.

Société en commandite Transgesco

The société en commandite Transgesco was formed under a partnership agreement on July 2, 2003, within the meaning of the Civil Code of Québec.

Its purpose is to manage various partnerships with private sector stakeholders in connection with business activities related to the STM.

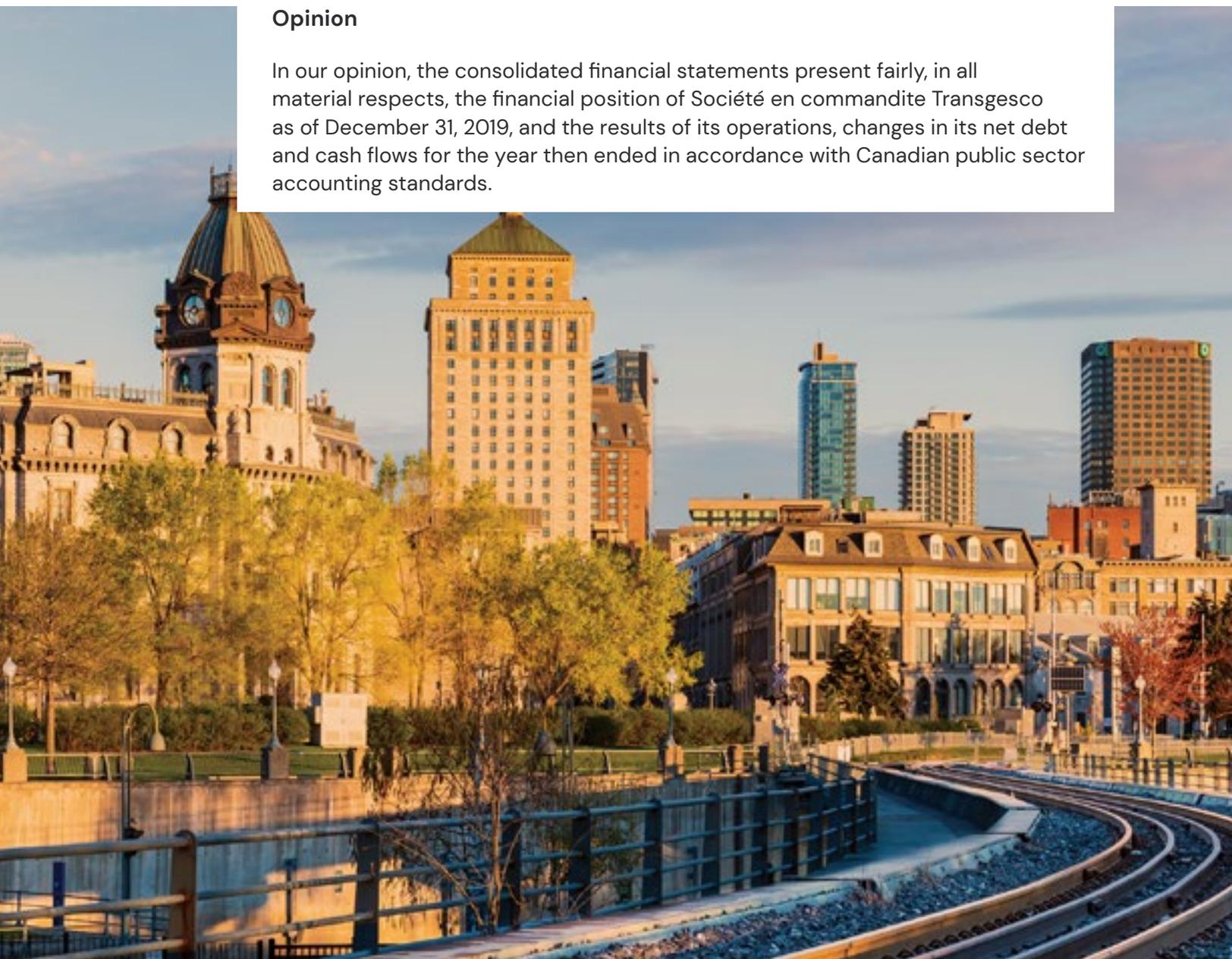
Report

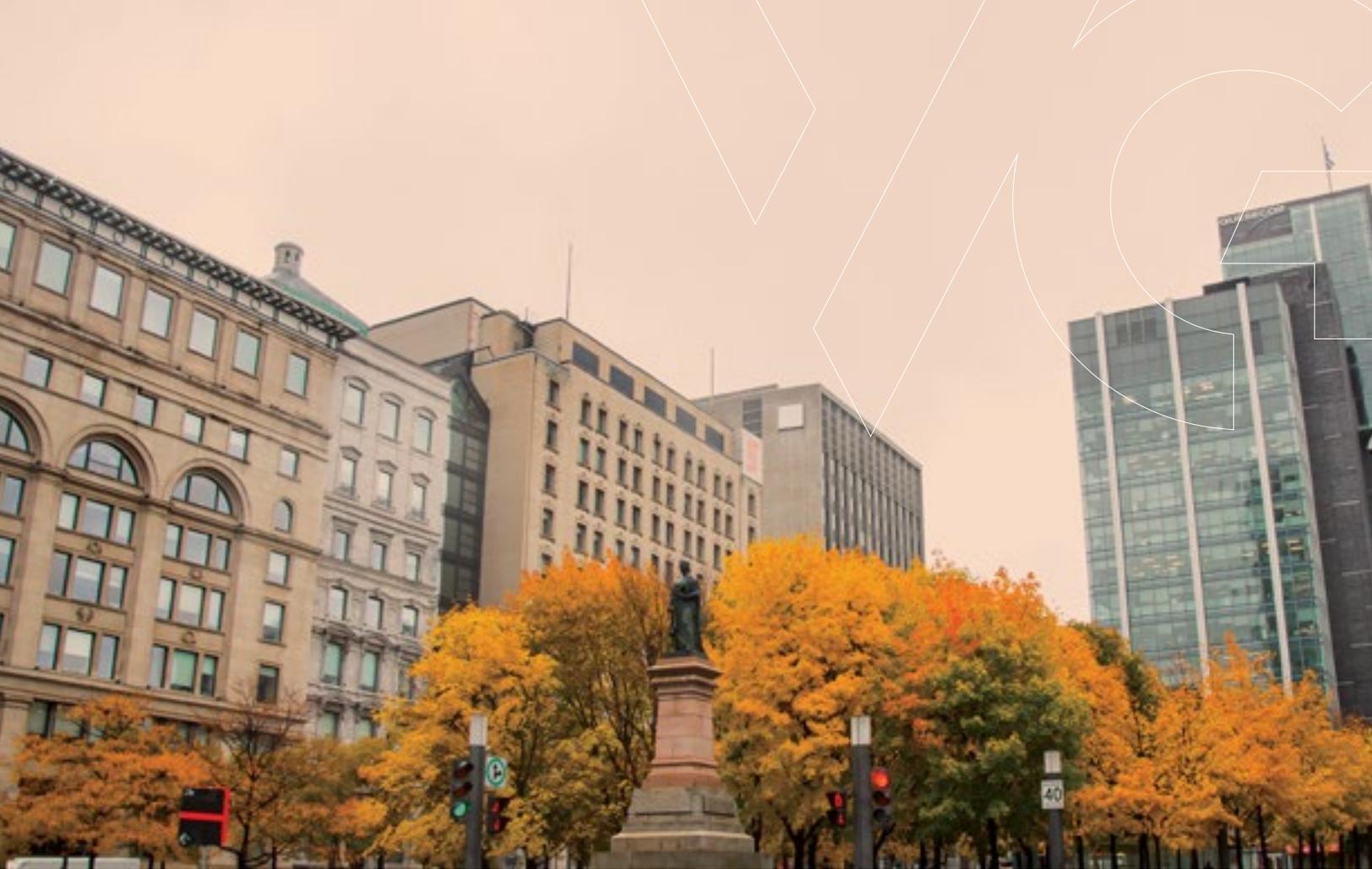
On March 25, 2021, we issued an unqualified joint auditors' report for this organization.

This is an extract from the report:

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Société en commandite Transgesco as of December 31, 2019, and the results of its operations, changes in its net debt and cash flows for the year then ended in accordance with Canadian public sector accounting standards.





3.

Performance Audit and Information Technology

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



3.1.

Street Lighting System Upgrade

January 22, 2021

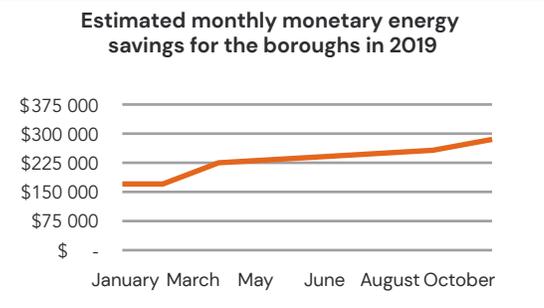
2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

Street Lighting System Upgrade

Background

In 2014, based on the results of pilot tests conducted over the previous two years, the City undertook a massive project to replace the City's approximately 132,000 high-pressure sodium (HPS) bulbs illuminating the City's streets and sidewalks with light-emitting diodes (LED) lights. The purpose of the project was to reduce energy consumption by at least 50% and maintenance costs by 55%. In addition, the City wanted to install a smart communication system for the lights so that it could monitor their condition remotely in real time. In 2015, the central city proposed to take responsibility for the light conversion for all 19 boroughs, and contracted a private firm to manage the project, purchase equipment for the smart system and outsource the work of installing lights to three subcontractors. The City, for its part, handled the purchase of LED lights. The total authorized budget for all this work was \$110 million.



Purpose of the Audit

The purpose of this audit was to ensure that the upgrade of the City's street lighting system to light-emitting diodes enabled the City to achieve the projected savings in energy and maintenance costs.

Results

To date, the street light upgrade has enabled the City to achieve energy savings that exceeded the 50% expectations. However, these savings are based on data generated by the firm managing the project then transferred to the City, without any validation by the City. We also did not obtain evidence from the City that it has the necessary information to show that it has achieved maintenance savings of approximately 55% as a result of the street light conversion. What is more, the City was paying for repair work that the boroughs should have done, and in other cases, the boroughs themselves were doing the repair work without allowing the equipment supplier to honour the clauses dealing with equipment quality in the contract for the purchase of lights and their attendant warranties and without claiming the compensation to which it is entitled under these contracts.

Main Findings

Pre- and Post-Conversion Comparison of Energy Costs

- The City does not assess the energy savings brought about by the street light conversion. It receives from the firm responsible for managing the project a monthly count of the HPS lights removed and the LED lights installed, along with their respective intensities, but it does not do a field validation or calculation of the energy savings realized.
- The firm responsible for managing the project assesses the monetary savings that should be achieved by the boroughs, without the City doing a field check of these savings or validating the information that is forwarded to the boroughs.

Process for the Maintenance and Repair of Lights for Efficient Operation

- The boroughs do not share a standard process to manage how repairs under warranty are to be carried out.
- Clauses in the contracts with the firm responsible for managing the project and with the equipment suppliers provide that if they fail to rectify a malfunction in equipment within a specified period, the City can claim compensation. However, some boroughs do the repair work themselves, which does not allow the City to inform the firm or the supplier, and it loses all recourse in connection with this compensation.
- In other cases, the City asks the firm in charge of the project to correct problems that should have been repaired by the boroughs. The firm then bills the City for this work over and above its contract work for street light conversion.
- The City replaces parts for equipment under warranty without obtaining written confirmation from the manufacturer that this does not violate the warranty.

Project Management

- There was no approval file for this project, as set out in the administrative framework for large-scale projects subject to the *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux*.
- The interactive map, which is used to inform the public of the progress of the light conversion project, does not take into account lights that were replaced outside this project.

In addition to these results, we have formulated various recommendations to the business units that are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms

BPPI	Bureau des projets et programmes d'immobilisations
HPS	high-pressure sodium
K	Kelvin degrees
LED	light-emitting diodes
SUM	Service de l'urbanisme et de la mobilité



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1. Background

The Ville de Montréal (the City) consists of a road system of approximately 4,050 kilometres. To ensure the safety of its citizens, approximately 110,000 street lamps,^{1,2} some with two lights, illuminate the streets and sidewalks, for a total of roughly 132,500 lights. These street lamps can be of two types, either functional³ (80% of the lights on the City's territory) or decorative⁴ (20% of the lights on the City's territory) (see Appendix 5.3 for a diagram of the components of a street lamp).

According to the Service de l'urbanisme et de la mobilité (SUM),⁵ the energy costs paid to Hydro-Québec in 2012 for all the City's street lamps amounted to \$12,422,822. At that time, most of the luminaires associated with these street lamps consisted of high-pressure sodium (HPS) bulbs whose power could range from about 100 watts to several hundred watts, even up to 1,100 watts. Considering that, according to the SUM, a light is lit 345 hours a month, or 4,140 hours a year, the approximate annual consumption of these lights ranges from 400 kWh to 4,500 kWh.⁶

From 2012 to 2014, the SUM conducted various tests to replace HPS lights with more energy-efficient light-emitting diode (LED) lights. To maintain an equivalent lighting level, the difference in power between the old HPS light and the LED replacement light varied from 45% to 61%. Furthermore, according to the SUM, the lifespan of an HPS light is 15,000 hours, compared with 75,000 hours for an LED light, reducing the frequency of operations that need to be carried out to replace the lights at the end

¹ The street lamp consists of a lamp post (a vertical structure also commonly referred to as a pole), an arm (metal cantilever part interposed between the lamp post and the luminaire) and a luminaire (complete unit consisting of one or more lamps and parts designed to distribute the light, to position and protect the lamps and to connect the lamps to the power supply).

² Decision-making summary of the Service des infrastructures, de la voirie et des transports presented to city council in August 2015 to make a proposal to the City's 19 borough councils to manage and implement the street light upgrade program (File 1153113001).

³ Functional lights consist of a large lamp post, an arm and a luminaire and are more suitable for streets with several traffic lanes. Their height of more than 6 metres provides illumination over a long distance.

⁴ Decorative lights consist of a small lamp post topped by a light and have a total height of less than 6 metres, so that they can provide light beneath tree canopies. They are adapted for local streets that do not need a high level of lighting.

⁵ At the time, the Direction des transports, which is responsible for this Project, reported to the Service des infrastructures, de la voirie et des transports (now the Service des infrastructures du réseau routier), but in 2018, this department was transferred to the SUM. For the sake of simplification, the SUM will be used in this text to refer to the department responsible for this dossier, regardless of the period covered.

⁶ According to Hydro-Québec, the average electricity-heated home consumes an average of 22,000 kWh a year. Therefore, five 1,100-watt street lamps consume the equivalent of such a home every year.

of their service life. Over a 20-year time horizon, or roughly the lifespan of an LED light, the SUM estimated that it would be possible to reduce maintenance costs by approximately 55%.

On the basis of these tests, the City developed a project in the fall of 2014 aimed at converting the street lighting system from HPS to LED. The decision-making summary for the project presented to elected officials specified at the time that the City's public lighting assets constituted one of the largest municipal inventories in Canada.⁷ These assets are likely to grow because of a desire on the part of the Montréal municipal administration to develop vacant lots in order to accommodate new families and businesses, to better adapt the lighting to the urban environment in order to improve public safety and create an environment that promotes the use of active transportation (Transportation Plan), and to enhance the lighting of public squares, bicycle paths and other specific facilities through the addition of new street lamps.

In June 2015, city council agreed that, under section 85 of the *Charter of Ville de Montréal*,⁸ the SUM submit a proposal to the 19 boroughs through the *Table de concertation des directeurs d'arrondissement* to manage and implement the Street Lighting System Upgrade Project for all boroughs ("the Project"). Replacing the HPS lights was supposed to take place from the spring of 2016 to the end of 2020. According to the proposal made by the SUM to the boroughs, the estimated savings for the boroughs would be approximately 50% of their electricity bill and 55% of their maintenance costs. According to the SUM, the \$110 million Project, which had the full support of the central city, was to generate savings of \$278 million over the lifespan of the LED lights (20 years), for a break-even point at about eight years. In addition to the economic benefits, the SUM argued that the Project would help standardize the lighting and improve night-time visibility while providing safer, more pleasant lighting. The Project was also to include a "Smart System" component to manage and control lights remotely, provide information on their condition in order to facilitate their management and maintenance and provide information in real time on the functioning and power consumption of the lights. According to this proposal, the SUM took on responsibility for:

- submitting proposals to the competent authorities of each borough of the types of lights that will be installed on their territories for approval;
- preparing the plans and specifications for the purchase and installation of lights;
- preparing the calls for tenders for the purchase and installation of lights;
- managing the installation contracts by electrical contractors;
- preparing the plans and specifications for the purchase and installation of the smart lighting system;
- preparing the calls for tenders for the purchase and installation of the smart lighting system;
- training the staff required to run the new smart lighting system.

⁷ Decision-making summary of the Service des infrastructures, de la voirie et des transports presented to city council in August 2015 for the proposal made to the City's 19 borough councils to manage and implement the street light upgrade program (File 1153113001).

⁸ Chapter C-11.4.

In return, the boroughs assumed responsibility for:

- participating in the meetings necessary for the smooth functioning of the Project;
- issuing public property occupancy permits to contractors in a timely manner;
- ensuring that their staff participate in the training to be delivered by the Direction des transports.

All of the City’s 19 borough councils agreed to the SUM’s proposal between August 2015 and January 2016. Since, at that time, Saint-Laurent borough had already started the work of converting lights fastened to wooden Hydro-Québec posts to LED, it agreed to the proposal, but excluding these lights from the Project.

Tables 1 and 2 summarize the contractual relations established by the SUM for the implementation of the Project.

TABLE 1

Division of Responsibilities in the Implementation of the Street Lighting System Upgrade Project

Body responsible	Procurement of equipment			Management		Installation	Accountability
	LED light	Smart system		Planning of the work	Lights inventory		
		Node/gateway	Software				
City (SUM)	X			X			
Firm A		X	X		X	X ^[a]	X
Contractor 1						X ^[a]	

^[a] Contractor 1 is responsible solely for the installation of LED lights for underpasses and tunnels, while Firm A is responsible for installing all other lights by outsourcing the work out to contractors 2, 3 and 4.

TABLE 2

Contracts Concluded by the SUM for the Implementation of the Street Lighting System Upgrade Project

Type of contract	Value ^[a]	Successful bidder	Subcontractor
Management, coordination and installation of LED lights	\$29.2 million	Firm A	Contractors 2, 3, 4 (street light installation)
Procurement and installation of Smart System	\$28.0 million	Firm A	Firm B (software programming)
Purchase of functional lights	\$18.5 million	Supplier i	None
Purchase of decorative lights	\$29.7 million	Suppliers j, k, l	None
Purchase of lights for underpasses and tunnels	\$1.7 million	Supplier m	None
Installation of lights for underpasses and tunnels	\$3.4 million	Contractor 1	None

^[a] The value of contracts includes taxes and contingencies.

At the time we started our audit, in March 2020, the SUM estimated that 89,033 of the 132,500 lights that needed to be replaced had already been converted, for a technical progress of 67%. From a budget standpoint, commitments of \$110 million, which is the total value of the Project budget, had already been made. These commitments included the purchase of LED lights that are not yet installed and therefore do not contribute yet to the percentage of technical progress. With respect to meeting the deadline, the SUM stated at the start of our audit that the Project was to be completed only at the end of 2023, not the end of 2020, as originally planned, as a result of new spending control rules related to the budgets of the Three-Year Capital Expenditures Program.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act*, we completed a value-for-money audit mission on the Street Lighting System Upgrade. We performed this mission in accordance with the Canadian Standard on Assurance Engagement (CSAE) 3001, described in the *CPA Canada Handbook – Certification*.

The purpose of this audit was to ensure that the City's Street Lighting System Upgrade to LED helps achieve the expected savings in energy and maintenance costs.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies Canadian Standard on Quality Control (CSQC) 1 from the CPA Canada Handbook and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit work focused on the period from June 15, 2015, to June 30, 2020. However, for some aspects, data prior to this period was also considered. It was primarily completed from March 2020 to August 2020. We also took into account information that was sent to us up to January 2021.

The work was primarily performed with the following business units:

- The SUM;
- Anjou borough;
- Lasalle borough;
- Rosemont–La Petite–Patrie borough.

Upon completing our audit, we submitted a draft audit report to the managers of each audited business unit for discussion purposes. The final report was then forwarded to the management of each business unit involved in the audit to obtain action plans and timelines for implementing the recommendations concerning it, as well as to the Direction générale. A copy of the final report was also forwarded to the deputy director-general of Service aux citoyens, and the director of the Service de concertation des arrondissements. A copy of the final report was also submitted, for information purposes, to borough directors not directly targeted by our audit so they could implement recommendations if appropriate.

3. Audit Results

3.1. Purpose of the Project and Achievement of the Expected Results

3.1.1. Actual Energy Efficiency Gains

Evaluation of Actual Energy Efficiency Gains

As early as the planning stage of the Project, the SUM expressed the view that energy reductions of 50% were foreseeable as a result of the conversion of HPS lights to LED. This is what appears in the feasibility study produced in June 2014, as well as in presentations that were given subsequently, in January 2015, at the *Table de concertation des directeurs d'arrondissement* and, in August 2015, to the City's mayor. These savings are based on a pilot project conducted in Ville-Marie borough, where the energy gains varied from 39% to 61%, depending on the power of the HPS light replaced and that of the LED light added. While this Project was presented to borough directors and the mayor of the City, there was no final version of the 2014 feasibility study, and it was not approved by the department manager at the time.

The boroughs also noted that the projected energy savings were supposed to be approximately 50%, since the decision-making summaries of the borough councils that agreed to the SUM proposal to implement the Project under section 85 of the *Charter of Ville de Montréal* all mention such energy savings. However, from 2017 to 2019, the decision-making summaries prepared by the SUM for the awarding of contracts to manage the Project and purchase lights cited energy savings of only about 35%. These decision-making summaries do not explain why the SUM was then considering lower energy savings than those forecast in 2014–2015. During our audit, this department justified these reductions in energy savings by explaining that they resulted from the decision to install lights with a light intensity of 3,000 Kelvin degrees (K) instead of 4,000 K,⁹ as originally planned. According to the SUM, a 3,000 K light requires more energy to obtain a lighting level similar to that provided by a 4,000 K light.¹⁰

Considering that the justification for the Project was based largely on the realization of energy savings for the boroughs, we would have expected the SUM to monitor the actual savings and to be able to provide an assessment of the percentage of savings generated by the Project. We were not, however, given a formal demonstration that the SUM is conducting such an evaluation. At the very most, the firm responsible for managing the Project (Firm A) produces a monthly summary table listing the number of HPS lights removed and the number of LED lights added, each classified by power, for each borough and for each month. The SUM does not conduct any assessment or analysis of this light replacement table. To assess the energy savings generated by the Project, we extracted data from the summary table to determine the total power

⁹ A 4,000 K light produces colder (white) lighting than a 3,000 K light, which appears more yellow (so-called warm light).

¹⁰ This decision to install 3,000 K rather than 4,000 K lighting was made in response to pressure from citizens' groups, even though the Institut national de santé publique du Québec (INSPQ) issued the opinion that risks to human health from these two types of lighting were similar.

of all the HPS lights removed and the total power of all the LED lights added. We were able to do this for the period covered by the most recent summary table that we obtained, which was October 1, 2017, to March 15, 2020. Based on our calculations, which are not intended to determine the effectiveness of the Project with precision and accuracy but to determine its order of magnitude, we established that the energy gain for the Project was greater than 70%, which is better than initially forecast by the SUM (see Table 3).

We nevertheless feel that this high performance, which exceeds predictions, does not justify the SUM's failure to periodically monitor the evolution of energy gains achieved by the Project.

TABLE 3

Assessment by the Bureau du vérificateur général of the Order of Magnitude of Energy Savings Achieved by Replacing HPS Lights with LED Lights from October 1, 2017, to March 15, 2020

Lights	Quantity	Total power	Average power per light
HPS lights removed	83,667	12,985,812 watts	155.2 watts ^[b]
LED lights added	84,748 ^[a]	3,414,985 watts	40.3 watts
Savings	---	73.7%	74.0%

^[a] The SUM added more lights than it removed in order to correct lighting in areas that were not considered sufficiently illuminated at night.

^[b] Average power is obtained by dividing the total power by the number of lights.

Source: SUM.

3.1.1.A. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité periodically assess the energy savings generated by the Street Lighting System Upgrade Project to ensure that it can show that these savings are at least similar to those that had been planned at the time of the original presentation of the Street Lighting System Upgrade Project to the boroughs, or to be able to examine various reasons that might explain why savings were lower than anticipated.

Reduction in Energy Costs for Boroughs

In 2015, when the Project was presented to the borough directors, the SUM had expressed the view that boroughs would achieve savings of about 50% as a result of the replacement of HPS lights with LED lights. We therefore sought to determine whether the boroughs are periodically informed of these monetary savings related to the energy savings resulting from the Project.

Firm A produces, on a monthly basis, a table of monetary savings achieved by each borough based on the progress of the Project. The SUM receives this file and forwards it to the boroughs.¹¹ According to the information obtained from the SUM, Firm A calculates energy savings by assessing the difference in power between the old light and the new light, considering each light to be operational 345 hours a month. This is the basis for assessing the differential (pre-/post-replacement) in energy consumption for each light and, by applying Hydro-Québec's rate for general public lighting service, for assessing how much less it now costs to use this light for one month. Hydro-Québec also receives the table of monetary savings achieved by each borough, which the SUM says it can refer to in order to adjust the billing for the boroughs' energy costs so that they will benefit from the savings realized based on the progress of the project.

However, while the SUM transfers this file to the boroughs, it does not check the values before sending them to the boroughs, and it does not check with the boroughs to assess the accuracy of these savings and whether the boroughs are actually benefiting from them. According to the SUM, it is at present impossible to assess what a borough is actually required to pay Hydro-Québec for street lighting because, at the beginning of the Project, the Crown Corporation did not have an up-to-date inventory of all the City's street lights and was charging the boroughs a flat rate based on an estimate of the total kilowattage of lights in the borough. An agreement has been concluded with Hydro-Québec providing that at the end of the Project, the actual LED light inventory becomes the official profile of the City's inventory of lights. According to this agreement, neither of the two parties will then be able to make claims for amounts overpaid or due for the period prior to this Project.

We sought to reproduce the savings calculated by Firm A by referring to the summary table of the removal and addition of lights. We calculated the reduction in energy consumption for each borough following one year, then two years, of Project implementation, and we converted the total amounts into monetary savings, using the Hydro-Québec rate. We compared these values with the monetary savings communicated to the boroughs by the SUM for these same two periods. The discrepancy for the first year is 1.1%, and for the second year, it is not much higher (1.4%). However, the second figure conceals a discrepancy of 26.1% for Lachine

¹¹ At the time of our audit, the SUM stated that it did not forward any files in 2020 because of the work stoppage resulting from COVID-19 and did not forward any files in 2018 because the work of replacing lights had only started in October 2018. However, the summary table of lights removed and lights added produced by Firm A shows that lights were replaced prior to October 2018; for example, 1,901 lights were replaced in May 2018 in Mercier-Hochelaga-Maisonneuve borough, and 805 lights were replaced in August 2018 in Saint-Léonard borough.

borough and 59.8% for Outremont borough.¹² When asked what might account for these discrepancies, the SUM forwarded the question to Firm A, which replied by sending estimates of monetary savings for January 2020 that corresponded, within two dollars, to the estimates that we had made for these two boroughs. However, for the 19 City boroughs as a whole, these new estimates for January 2020 differ by 5.5% from the figures in the file that Firm A had already sent to the SUM. These discrepancies between the two versions of documents obtained from Firm A go as high as 53.76% for a single borough.¹³ It must be concluded that errors had been made in the calculations of monetary savings, or that the data initially sent by Firm A was incomplete or inaccurate. We feel that if the SUM had checked the data obtained from Firm A before forwarding the information to the boroughs, it would have been possible to detect such errors.

In addition to the lights replaced as part of the Project, some lights are replaced during road rehabilitation projects.¹⁴ According to the information obtained from the SUM, it is the road rehabilitation project manager's responsibility to inform Hydro-Québec of the light conversion carried out. Neither the summary table of replacements nor the monthly monetary savings file take into account these light replacements carried out outside the Project. When asked how Hydro-Québec was supposed to have a complete, exhaustive inventory of every street light actually installed on the City's territory, the SUM stated that a validation with the Crown Corporation will have to be done in the future to ensure that all the information on lights in its possession is similar to the City's information on lights. However, we think this future endeavour will be difficult to carry out if the City does not already have centralized information on all lights, including those covered by the Project (installed by Firm A or by the City) and those replaced as part of road rehabilitation projects. We therefore have concerns about the accuracy of billing that boroughs will receive in connection with street lighting.

3.1.1.B. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité monitor the quality and validity of the information it sends to the boroughs and third parties in order to ensure the accuracy of the information before forwarding it.

¹² Overall, the monetary savings for these two boroughs are relatively low compared with the overall savings of all boroughs, because few lights had been converted during the first two years in these boroughs. For this reason, a large discrepancy for the borough does not significantly affect the overall discrepancy for the boroughs.

¹³ The greatest discrepancies are for the Lachine (-27.5%), Rivière-des-Prairies-Pointe-aux-Trembles (34.3%), l'Île-Bizard-Sainte-Geneviève (35.3%) and Outremont (53.7%) boroughs.

¹⁴ These lights are acquired through the road rehabilitation budget for the street concerned and are installed by the contractor responsible for the rehabilitation work. No relationship is established with the Street Lighting System Upgrade Project.

3.1.1.C. Recommendation

We recommend that the Direction générale ensure that each manager of a project involving the conversion of a street lighting system to LED, including the Street Lighting System Upgrade Project, forwards the information on lights removed and lights added to Hydro-Québec to ensure that Hydro-Québec has an exhaustive inventory of the City's lights and that the bills it sends to the boroughs progressively reflect the monetary savings related to the energy savings resulting from the conversion.

3.1.2. Repair of Lights and Maintenance of Public Service

Under city council By-law 08-055 concerning the delegation to borough councils of certain powers relating to the arterial road system, the boroughs were given responsibility for the maintenance, repair and replacement of street lighting. With respect to local streets, under By-law 02-003 concerning the arterial and local road system, the boroughs are responsible for all streets that are not part of the City's arterial system.¹⁵

Within the scope of the Project, neither the draft version of the feasibility study nor the decision-making summary of the SUM proposal that was presented to the boroughs in 2015 sets forth the boroughs' responsibilities with respect to maintaining and repairing LED lights. Only the presentation given at the *Table de concertation des directeurs d'arrondissement* in January 2015 stated that street light maintenance management would remain unchanged following the conversion.

The call for tenders for the acquisition of professional services for the management, coordination and installation of LED lights¹⁶ makes no mention of the successful bidder's responsibility for repairing the LED lights that it installs. As shown in Table 1, Firm A is also responsible for the installation of lights by contractors to which it outsources this work. We would have expected the technical specifications to address the issue of the repair or of the warranty for installation services.

Moreover, even though the responsibility for the maintenance and repair of street lights falls to the boroughs, Firm A and the equipment suppliers will be involved in repairing defective Smart System lights and other equipment under the warranties that come with this equipment or its installation. It therefore seems essential to us that there be in place a sharing of roles and responsibilities and a warranty management system, including a process for following up on repair requests. This would in particular enable the City to enforce the various clauses covering compensation in the event of defects in equipment under warranty. However, based

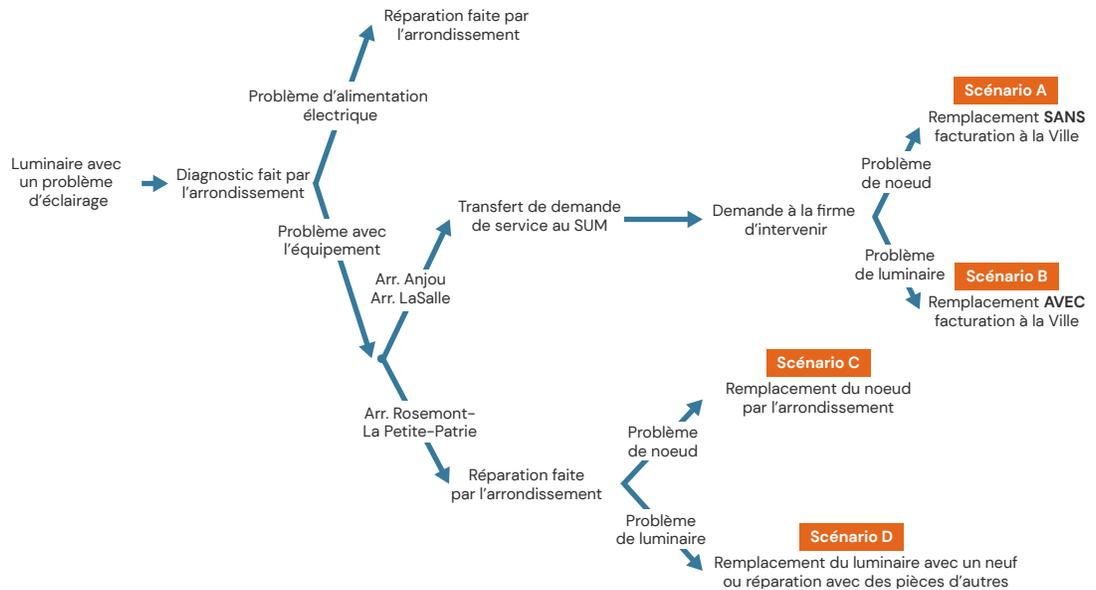
¹⁵ The Direction de l'entretien de l'éclairage, de la signalisation et du marquage sur la chaussée of Rosemont-La Petite-Patrie borough is responsible for the maintenance and repair of both its own street lights and those of the boroughs of the former Ville de Montréal, i.e., Ahuntsic-Cartierville, Côte-des-Neiges-Notre-Dame-de-Grâce, Plateau-Mont-Royal, the Sud-Ouest, Mercier-Hochelaga-Maisonneuve, Rivière-des-Prairies-Pointe-aux-Trembles, Ville-Marie and Villeray-Saint-Michel-Parc-Extension boroughs. The other boroughs handle the maintenance and repair of lights on their respective territories.

¹⁶ Call for tenders 17-16015.

on our audit, we found that there is no standard approach for managing repairs under warranty. We identified four different possible scenarios, depending on whether the defect occurs in one borough or another, and on whether a luminaire or a Smart System component is affected (see Figure 1).

FIGURE 1

Responsibility for Repair Work Performed on a Luminaire with a Lighting Problem, Depending on the Borough



Problem with a Node or Other Smart System Component

According to the technical specifications in the call for tenders for the procurement and commissioning of a smart urban lighting management system,¹⁷ the equipment provided, including labour, upgrading of the equipment and software required, must be guaranteed for a 10-year period. During this period, a service call for a malfunction must be taken by the successful bidder within a period of less than 8 hours, and the repair work must begin within 48 hours and must be completed within 96 hours. If the successful bidder does not comply with these timelines, the City proceeds to do the repair work itself at the expense of the successful bidder and demands compensation of \$200 for each replaced node or \$500 for each replaced gateway. In the case of software, if problems arise in the course of the 10 year warranty period and the successful bidder is unable to meet the same deadlines to correct the problem, the City must receive compensation of \$500 for each missed deadline.

¹⁷ Call for tenders 15-14912.

In practice, when a service request is placed in a borough because of a malfunction in a light, if the problem is not related to the power supply, Anjou and LaSalle boroughs transfer the service request to the SUM, which, in turn, will ask Firm A to ask one of the three contractors to step in and do the repair work. If a Smart System component is the source of the problem (**Scenario A**), Firm A handles the replacement of the equipment, since it provided the equipment within the scope of the Project.

For all boroughs served by Rosemont–La Petite–Patrie borough, the borough itself handles the repairs, replacing the defective node (the SUM provides the borough with replacement nodes) (**Scenario C**). The borough proceeds in this way to minimize the duration of a malfunction in a light and the public inconvenience associated with it. However, the borough, in replacing a Smart System component itself, does not inform the SUM of the problem, and the SUM, in turn, cannot inform Firm A of the problem. If such a notice is not sent to Firm A, the City cannot enforce the compensation clause. Moreover, in a letter to the SUM dated June 30, 2020, Firm A reiterated that it did not authorize *[TRANSLATION]* “any operation on devices closely connected with the [smart lighting management system, and that] ... if the Ville de Montréal carries out certain operations, they will be at the expense of the Ville de Montréal and [Firm A] can never be held responsible for the associated expenses”. In this context, we question whether the borough, by taking direct action to repair Smart System components, deprives the City of any recourse against Firm A if any additional problem is encountered with this equipment.

Problem with a Lighting Component

The call for tenders for the procurement of LED street lights¹⁸ (Cobra lights) stipulates that the lights must be guaranteed for at least 10 years¹⁹ and that *[TRANSLATION]* “installed lights that do not reflect the characteristics specified by the manufacturer, whether they have a manufacturing or performance defect, an insufficient useful life or other irregularities, will be replaced and subject to enforcement of a lump sum payment of \$200 each, in order to cover additional expenses resulting from light replacement activities related to this installation”.

For decorative lights, the call for tenders for the procurement of LED decorative lights and arms²⁰ stipulates that the lights must be guaranteed against any defect in design, manufacture and materials for a 10-year period. Furthermore, if the City returns a defective light to the supplier, the supplier must repair it and return it to the City no later than 7 days following the notice of defect, failing which the supplier must replace the light while it is being repaired.

Moreover, for both Cobra lights and decorative lights, the technical specifications state that during the validity period of the warranty (10 years), the City will conduct photometric field measurements in order to ensure that the lights are performing.

¹⁸ Call for tenders 17-15727.

¹⁹ The 10-year warranty must cover the integrity and functioning of the luminaire housing and finish, the optical system, the wiring and connections, the LED light sources and the LED current regulator.

²⁰ Call for tenders 18-16647.

If a discrepancy between the field measurement and a light intensity simulation for this type of light is more than 10%, the supplier will be required to replace it at its own expense, including labour costs for the replacement. Moreover, if the number of lights with such a defect exceeds 1% of all the luminaires installed in a year, the supplier will be required to not only replace them, but also pay the City \$200 per luminaire in excess of this figure of 1% as compensation. However, it is not possible for the City to enforce the portion of the warranty covering the performance of luminaires, because the SUM does not carry out photometric field measurements once the LED lights are installed.

For Anjou and LaSalle boroughs, since they ask the SUM to respond in the event of a light malfunction (if it is not a power supply problem), and the SUM transfers this request to Firm A, Firm A asks one of the contractors to replace the light (**Scenario B**). However, since neither the contractor nor Firm A are responsible for the purchase of the defective light (it was the City that provided it — see Table 1), Firm A bills the City for the operation.

For boroughs served by Rosemont–La Petite–Patrie borough, ever mindful of minimizing the duration of the malfunction of the light for the sake of the public, the borough itself proceeds to replace the defective light with another one supplied by the SUM or to replace the defective component using parts recovered from other LED lights that were removed from the network following an accident or breakage not covered by the warranty²¹ (**Scenario D**).

If the technical specifications for the acquisition of lights also contain a compensation clause, there is no register either in Rosemont–La Petite–Patrie borough or at the SUM to distinguish breakages covered by the warranty from accidental breakages not covered by it. Without this register, the SUM states that it cannot know how much compensation it can claim from the supplier. Therefore, in the end, it is Rosemont–La Petite–Patrie borough, in this case, that assumes labour costs for the replacement of a light under warranty (**Scenario D**), without compensation.

We questioned the SUM to determine whether the fact that the worker opens up lights in order to repair them with parts that come from other lights or were obtained from the SUM would affect the light warranty (**Scenario D**). According to the SUM, this type of repair has no effect on the light warranty. The SUM, however, was unable to provide us with a notice from the light manufacturer stating that the light warranty was still in force following repair work done on a light by the City.

Therefore, since there is no strategy for managing repairs and warranties for lights and Smart System components, we think that the City is paying for operations that it should have done itself (**Scenario B**), that it cannot enforce the compensation clauses in its calls for tenders (**Scenario C**), or that it is simply not claiming this compensation (**Scenario D**), and that it does not have the assurance that it is not jeopardizing the validity of the light warranty by doing repair work itself.

²¹ A light that is damaged in a traffic accident or by an act of vandalism, such as a rock thrown at it, is not covered by the supplier's warranty.

Since the City has no register of defective, replaced or repaired lights, we were unable to assess the amount of compensation and penalties that the City failed to seek from Firm A or suppliers.

3.1.2.A. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité develop a strategy for repairing lights and Smart System components and managing warranties and notify the boroughs of this strategy, in order to ensure that repair work is done quickly, to promote the enforcement of the various compensation clauses and to keep light warranties in force, while allowing boroughs to be compensated for work they were not required to do.

3.1.2.B. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité create a register of damaged, replaced and repaired lights and Smart System components, so that compensation can be managed more effectively under the warranties for this equipment.

3.1.2.C. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité obtain from its light suppliers a written notice concerning the validity of manufacturers' warranties when the Ville de Montréal itself proceeds to replace a defective component of a light under warranty, in order to ensure that the Ville de Montréal can enforce the specifications clauses if there are any additional problems with lights repaired in this manner.

3.2. Project Management and Monitoring

Tracking Costs for the Acquisition of Lights

The SUM is responsible for acquiring lights from suppliers, which deliver them to warehouses, where contractors subcontracted by Firm A procure supplies in order to perform the conversion work. We sought to determine whether the SUM was doing fair and accurate monitoring of the costs associated with the purchase and installation of these lights, as well as monitoring the management of light inventories managed by Firm A.

Three Excel files are used to manage and monitor expenses associated with the SUM Project:

- File A: Project Monitoring Table, which shows all the costs, by supplier and bill, for the Smart System, the lights, their installation and other professional services associated with the implementation of the Project;
- File B: Overall tracking of orders and bills for light suppliers. The content of this file is a subset of File A;
- File C: Monitoring of bills sent by Firm A for the management, coordination and installation of lights.

We sought to reconcile the contents of File B with those of File A, since the first is theoretically a subset of the second. For the three light suppliers, we found discrepancies between the two files.

- For Supplier 1 (“Cobra”-type lights — the largest number of lights in the Project), a discrepancy of 1.1% was measured due to three bills that were missing from File B but were present in File A;
- For Supplier 2 (decorative lights), one bill present in File A was not found in File B, and in another case, it was the other way around, for a discrepancy of 2.5% in the total values between the two files for this supplier;
- For Supplier 3 (also decorative lights), we found a total amount of \$494,542 in File A for which no follow-up of bills was entered in File B, and \$512,715 of bills in File B that we were unable to reconcile with entries in File A, for a total error of \$1,007,257, or about 16.9% of the bill totals for this supplier. The non-reconciliation for this supplier affects 25 bills.

Therefore, in all, 30 bills out of a total of 357, or 8.4%, were not reconciled. Based on this finding, we feel there is a lack of monitoring and rigour in tracking bills for the purchase of lights in the Project.

Furthermore, we questioned the SUM to determine how it was validating the monitoring of the inventory of lights that were purchased, installed or remaining in the warehouses of Firm A, which is responsible for managing both inventories and light installation. The SUM has confirmed that, even though Firm A carries out an inventory reconciliation in an Excel file and sends it every month to the SUM, no validation is done by the department, which claims that it relies completely on the information provided by Firm A, not knowing whether it is comprehensive and accurate.

Tracking Light Installation Costs

Every month, Firm A updates an Excel file (called SuiviFacturation), to keep track of the progress of installations (in terms of both the number of lights installed and billing done by the City). Every month, Firm A sends a series of bills to the SUM for the lights installed during the previous month.²² Before authorizing the payment of these bills, the SUM checks the number of lights that were installed during the billing period by extracting from the database the number of replaced lights that was loaded by Firm A. By comparing this data with the data from the previous month, the SUM is able to estimate the number of lights replaced for this billing month. If there are differences between this estimate and the information provided by Firm A with the current bills,²³ it notifies Firm A of the discrepancies, requesting that the bill in question be corrected. Once the correction is made and the new bill is obtained, the SUM authorizes its payment. However, we would like to point out two problems with this procedure. First, the steps to be followed for this process are not documented. The employee responsible for carrying out the process has a good command of the procedure, but since it is not documented, there is a risk here that the SUM will no longer be able to perform such checking, at least not as effectively, if the employee assigned to do it should leave. Moreover, both sources of information used by the SUM to do the checking are mainly from Firm A; the database from which the data is extracted is loaded by Firm A and the bills are also produced by Firm A. The SUM therefore has no oversight that is independent of Firm A to monitor the installation of lights. In this regard, the SUM has confirmed that it does not do a field check of the lights installed, and relies on the information provided by Firm A. This is how we found out that there was agreement between all the bills and the progress report produced by Firm A for two months selected at random (February 2019 and September 2019). However, as we pointed out above, this is a case of an artificial agreement, since all the information originates from the same source.

²² The contract for managing and installing lights for Firm A is not paid at a flat rate but is based on the number of lights installed.

²³ The SUM may take the view that even though a light was replaced, it is still defective and the light is not fully functional.

We also attempted to reconcile the billing data appearing in the SuiviFacturation file with the data in File A (Overall Project Monitoring Table — purchase and installation of lights). The exercise proved to be conclusive only for the months from October 2018 to May 2019, whereas data was available from September 2017 to September 2019. Therefore, there was agreement for only eight months out of 25, or 32%. The SUM explained that the discrepancy arises from the fact that the bills are entered in File A for the other months, including the deductions and taxes, which was not done for the months from October 2018 to May 2019. This leads us to conclude that the data entered in File A is not standardized, which limits its use for analyses by the SUM. It is worth repeating that File A is used mainly to check the bills issued by Firm A.

Overall Cost Tracking for the Project

This Project involves a large number of transactions involving the City, light suppliers and Firm A. We wanted to ensure that, other than the uniformity and agreement issues we identified in connection with the monitoring tools put in place by the SUM, as shown above, there was equivalence between the transactions authorized and reconciled using these tools and the information in the City's central financial system (the General Ledger) which, in the end, is the ultimate tool used to determine the total amount of expenses incurred for a project.

Based on data extracted from the transactions entered in the General Ledger for the Project accounting code from 2015 to 2020, we identified 61 entries that the SUM had not entered in its File A, which should cover all the expenses associated with the Project for a total of \$1.17 million. Table 4 shows the five firms for which the total amounts are the highest. In 2019 and 2020, 10 transactions associated with the Société de transport de Montréal (STM) were entered in the General Ledger under this SUM Project for a total of \$376,000. After checking, the SUM confirmed that the expenses paid to the STM had been erroneously charged to the wrong project. This was an error in inputting the unique accounting code specific to each project.²⁴ Based on this finding, we have concerns about the accuracy of the allocation of other transactions in Table 4 in the Project audited.

Our work of reconciling entries in the General Ledger and File A also enabled us to determine that the SUM file takes into account bills with two suppliers of LED lights, for a total of \$1.67 million, that are not found in the General Ledger (see Table 4). The total (in absolute value) of the discrepancies between the entries in the General Ledger and File A is therefore approximately \$2.84 million.²⁵ While, out of a total projected budget of \$110 million for the Project, these discrepancies account for only a 2.6% error, they nevertheless reveal a lack of oversight in the compilation and monitoring of expenses for the Project. Furthermore, in view of the incomplete compilation of expenses for the Project, both in File A and

²⁴ This observation was made by the Auditor General of the Ville de Montréal in connection with her audit of the City's financial statements.

²⁵ This discrepancy of \$2.84 million takes into account both the discrepancy of \$1.17 million for the 61 entries that do not appear in File A and the discrepancy of \$1.67 million for bills missing from the General Ledger.

in the General Ledger, we question the ability of the SUM to assert in its accountability reports to the Bureau des projets et programmes d'immobilisations (BPPI) that no cost overruns are projected for the Project.

TABLE 4

Total Discrepancies for Each Supplier in the General Ledger Entries and in the SUM Project Monitoring Table (File A)

	2015	2016	2017	2018	2019	2020	Total
Transactions entered in the General Ledger for the Project, but not found in the SUM Project Monitoring Table (File A)							
Société de transport de Montréal (STM)	\$0	\$0	\$0	\$0	\$124,208	\$251,972	\$376,180
Firm X.1	\$0	\$0	\$0	\$0	\$166,940	\$0	\$166,940
Firm X.2	\$12,250	\$43,543	\$70,188	\$26,989	\$0	\$0	\$152,970
Firm X.3	\$0	\$38,997	\$0	\$75,999	\$0	\$0	\$114,996
Firm X.4	\$0	\$102,721	\$0	\$0	\$0	\$0	\$102,721
Firm X.5	\$0	\$0	\$58,226	\$13,784	\$0	\$0	\$72,010
All other firms	\$11,305	\$75,433	\$58,541	\$94,319	\$40,784	\$(91,863)	\$188,519
Subtotal	\$23,555	\$260,694	\$186,955	\$211,091	\$331,932	\$160,109	\$1,174,336
Transactions entered in the SUM Project Monitoring Table (File A), but not found in the General Ledger for the Project							
Firm X.6	\$0	\$0	\$0	\$0	\$0	\$230,667	\$230,667
Firm X.7	\$0	\$0	\$0	\$0	\$1,026,072	\$410,124	\$1,436,196
Subtotal	\$0	\$0	\$0	\$0	\$1,026,072	\$640,791	\$1,666,863
TOTAL	\$23,555	\$260,694	\$186,955	\$211,091	\$1,358,004	\$800,900	\$2,841,199

3.2.A. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité establish control mechanisms so that the files used for monitoring the Street Lighting System Upgrade Project contain comprehensive, consistent and accurate information, in order to ensure that it can do appropriate cost monitoring for a project of this scope.

3.2.B. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité carry out a periodic control of the inventory of lights in the possession of the firm responsible for managing the Street Lighting System Upgrade Project, in order to ensure, in an independent manner, that the information obtained for this purpose is fair and accurate.

3.2.C. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité do a periodic field check of the lights replaced as part of the Street Lighting System Upgrade Project, in order to ensure, irrespective of any information obtained from the firm responsible for managing the Street Lighting System Upgrade Project, that the lights were actually replaced and that the information obtained from this firm is fair and accurate.

3.2.D. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité document the process for checking light installation invoices, in order to ensure continuity of monitoring independently from the person who is carrying it out.

3.2.E. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité establish control mechanisms in order to ensure that only transactions actually associated with a project are charged to said project, for the purpose of providing fair, accurate accounting of changes in the costs of a project based on the Ville de Montréal's global financial data.

3.3. Accountability Reporting

Since 2010, the City has had in place a *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux*, which provides a framework for the management of projects requiring an investment of more than \$50 million or more than \$10 million a year. These projects and programs must go through various phases and obtain the approval of elected officials in order to move forward and enter the operating phase (project implementation). Since April 20, 2015, an administrative framework²⁶ for developing an approval file for projects subject to the *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux* has been in place which establishes a formal process for obtaining these authorizations in order to proceed to the next phase. The Project, which has an operating budget of approximately \$110 million and was adopted by city council on June 18, 2015, after the administrative framework came into effect, did not comply with this *Cadre de*

²⁶ C-OG-DG-P-15-001.

gouvernance and was not presented to the City's executive committee, in accordance with this management framework, in order to obtain authorization to proceed to the execution phase.²⁷ According to the SUM, this was not a large-scale project, which would explain why it did not follow this approval process. However, in view of the fact that the SUM submits quarterly accountability reports²⁸ to the BPPI,²⁹ we find it difficult to maintain that the Project was not considered large-scale. The Auditor General of Ville de Montréal, in her 2020 annual follow-up report, also discusses monitoring of the implementation of the *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux*. We will therefore not go into the reasons here why the Project did not adhere to this governance framework.

Under the proposal the SUM made to the boroughs in 2015 to take responsibility for the Project, the department had not committed to monitor the progress of the Project with the boroughs. However, at the time we were conducting our audit, the boroughs complained that they were not receiving sufficient information on the progress of the Project. In particular, they wanted to know how the planning of street lighting conversion work for the future would affect their territories so that they would be better able to plan the operations they needed to carry out, either on these lights or related to other projects in their vicinity. They complained about the lack of visibility associated with the progress of the Project.

The boroughs also state that they do not know how to use the software for monitoring the functioning of the lights in real time (monitoring is made possible by nodes on each light that create a Smart System). Firm A must provide training to [TRANSLATION] "field equipment maintenance staff"³⁰ on the use of the Smart System, particularly with respect to general functional analysis of the system, its detailed operation, the different units or major components and their functions, as well as repair work, corrective measures, preventive maintenance and front-line troubleshooting for them. However, even though the Project is well under way and the boroughs are already doing maintenance and repair work on LED lights and Smart System components, the boroughs claim that they received no training in connection with the Smart System, from either Firm A or the SUM. The SUM told us, at the time of our audit that Firm A had not yet provided this training because the software program used to control LED lights had not yet been completed by a subcontractor of Firm A, even though it should have been completed in 2018. While we were finalizing our audit, the City was engaged in litigation with Firm A over the programming of the IT tool used to control the Smart System.

²⁷ This lack of compliance with the *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux* and the administrative framework for the development of a project approval file does not mean that the Project was not authorized by elected officials, but rather that it was authorized gradually, each time a request was made to authorize the awarding of a service contract or light purchasing contract.

²⁸ In this regard, we noted that the SUM produces this accountability reporting at the frequency and according to the requirements established by the BPPI.

²⁹ The BPPI is responsible, on behalf of the Direction générale of the City, for implementing this *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux*.

³⁰ Technical specifications in Call for tenders 15-14912.

As part of its contract for the management, coordination and installation of lights, Firm A had to [TRANSLATION] “place a monitoring tool/web application at the City’s disposal to observe the progress of work in real time and monitor the progress of each of the teams in the field”³¹. To meet this requirement, Firm A uses a commercial application marketed by Intel Opp that enables it to produce a map displaying the information contained in the database in which Firm A enters information on each light that is to be replaced or is replaced. The SUM posted a read-only version of this map online,³² without the technical details of each light. This map, which is seen by the SUM as a way of ensuring public accountability, gives the progress status of projects³³ for each street light on the City’s territory. However, since the Project does not concern street lights that are replaced as part of a road rehabilitation project (rehabilitation of the entire street and sidewalks), those are identified on this map as “PRR” (*Projet Réfection Routière*), without any subsequent updating after the rehabilitation has taken place, because Firm A, which is responsible for loading the database used to generate this map, does not manage the PRR. Thus, the SUM discloses information that it cannot update, since it is not fully responsible for it.

3.3.A. Recommendation

We recommend that the Service de l’urbanisme et de la mobilité ensure that all the department’s project managers follow and comply with the *Cadre de gouvernance des projets et des programmes de gestion d’actifs municipaux* and the administrative framework for the development of a project approval file for projects subject to this framework, in order to ensure that the necessary authorizations are obtained for the execution of future projects and to ensure accountability reporting to the Ville de Montréal’s Direction générale.

3.3.B. Recommendation

We recommend that the Service de l’urbanisme et de la mobilité periodically inform the boroughs of the progress status of the Street Light Conversion Project and regularly inform them of the areas where the next street light conversion work will take place, so that boroughs can plan their own civil engineering projects on their territory.

³¹ Call for tenders 17-16015.

³² https://intelopp.com/projects/montreal/maps/public_map_v2.html

³³ A colour-coded legend indicates whether the conversion is completed, additional work is required, a light is ready to be converted, the conversion is under way, a problem was encountered during the conversion or whether a road rehabilitation project is involved.

3.3.C. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité ensure that the boroughs receive adequate, appropriate training for doing repair work, undertaking corrective measures and doing preventive maintenance and front-line troubleshooting on the different components of the Smart System that is connected to the light-emitting diodes lights, so that boroughs can work effectively and efficiently on these lights.

3.3.D. Recommendation

We recommend that the Service de l'urbanisme et de la mobilité either publish information related to street lights that are solely under its jurisdiction in the project of converting street lighting to light-emitting diodes or require all business units also performing such street light conversion work to provide it with information allowing it to update the interactive map once a road rehabilitation project is completed, in order to ensure that it releases comprehensive, accurate information to the public.

4. Conclusion

In 2017, the Ville de Montréal (“the City”) embarked on a Project to convert 132,500 high-pressure sodium (HPS) lights used for street lighting in the 19 boroughs to light-emitting diodes (LED) lights. This Project had several objectives, namely, to achieve energy and monetary savings (lower energy consumption and reduction of the maintenance and repair work needed) and to establish a smart communication network to allow monitoring of the functioning of the lights in real time.

As of March 2020, two thirds of the lights had been replaced and the Service de l’urbanisme et de la mobilité (SUM), which is responsible for the Project, anticipated that it would be entirely completed by the end of 2023. From a budget standpoint, commitments of \$110 million, which is the total value of the Project budget, had already been made. These commitments include the purchase of LED lights that are not yet installed and therefore do not contribute yet to the percentage of technical progress. Management and implementation of this Street Light Conversion Project was contracted out to a private firm, which outsourced its implementation to subcontractors. The firm is also responsible for purchasing the Smart System components, while the City purchases and provides it with lights.

Our audit leads us to conclude that the City, through this Street Light Conversion Project, will achieve and even surpass its objective of reducing energy consumption for street lighting, albeit with a delay from its initial timeline. While the City targeted 50% energy reductions, the magnitude of the reductions, based on data provided by the firm responsible for managing the project but not validated by the SUM, seems to be greater than 70%. However, we noted that even though the City was successful in generating energy savings, it was not monitoring management of the Project. In fact, it does not undertake a rigorous regular assessment of the energy savings generated by the Project. We had to work using the data provided by the firm responsible for managing the project to establish that the 50% target would be exceeded. Moreover, the City does not control the quality of information produced by the firm and submitted to Hydro-Québec and to the boroughs concerning the number and types of lights replaced and the monthly monetary savings that the boroughs can expect to achieve. We also identified errors in these monetary savings that the City could have detected before it forwarded the information to the boroughs if monitoring had been in place. The City does not do field checks, either, to make sure that the project is being implemented, and instead relies on the information it obtains from the firm responsible for managing the Project. Moreover, the City does not carry out an inventory of the lights that are purchased, installed and still in the firm’s warehouses in order to ensure that all the lights purchased are actually used for the City’s Project. We noted that the City uses several separate files to monitor the progress of the Project and that there is no agreement between the information found among these different files or between these files and the City’s General Ledger. Finally, we found that the boroughs audited are not sufficiently informed of the progress status of the Project.

Moreover, since there is no standard, defined structure for the roles and responsibilities for the repair and maintenance of these new lights across the central city, the boroughs and the firm responsible for managing the Project, the City was unable to prove to us that the objective of reducing maintenance costs has been achieved or was in the process of being achieved, and consequently, we cannot draw conclusions concerning this part of the mission objective. In fact, we noted that the approach taken to repair new lights that are still under warranty varies from one borough to the next. This leads the City to outsource to the firm repair work that the City itself should have handled, and as a result pay for work performed externally that should have been done under City management. We also noted that in some cases, the City responds too quickly when there is a lighting problem and that it handles the replacement of defective equipment itself. By acting in this way, the City denies the firm responsible for the Project or the suppliers the opportunity to take action, and, depending on the speed of repair and the number of defects, to enforce the penalties provided for in the calls for tenders. Moreover, the City was not able to prove to us that the warranty on the new lights remained valid if the City itself replaced defective components of these lights. Finally, even though the City created a clause in the call for tenders for the acquisition of lights allowing it to claim compensation for lights that did not have an adequate illumination performance, as well as the replacement of these lights, to date it has not conducted any photometric tests to assess this performance. We therefore find that the City does not enforce the compensation clauses provided for in all calls for tenders associated with this Project. However, since there was no repair register, we were not able to assess the extent to which the City failed to claim compensation from its suppliers within the scope of this Project.

In light of these findings, we have recommended, in particular, that the SUM:

- periodically assess the energy savings generated by the Project that show that these savings are at least similar to those that had been planned;
- control the quality and validity of the information forwarded to boroughs and third parties;
- develop a strategy for repairing lights and Smart System components and for managing warranties and inform the boroughs of the strategy;
- create a register of damaged, repaired and replaced lights and Smart System components, so that compensation can be managed more effectively under the warranties for this equipment;
- carry out a periodic control of the inventory of lights in the possession of the firm responsible for managing the Project and of the lights replaced and already installed;
- implement control mechanisms so that the Project tracking files contain comprehensive, consistent and accurate information and only the transactions actually associated with a project are accounted for correctly and charged to said project;

- ensure that the boroughs receive adequate, appropriate training for the purpose of maintaining and managing the lights and the various Smart System components;
- inform the boroughs periodically of the progress status of the Street Light Conversion Project.

This municipal Street Light Conversion Project yields energy savings benefits that appear to exceed expectations, even though the SUM has not officially validated the data that would allow it to assert this. From the standpoint of accountability reporting by the SUM, this is a project that can pass under the radar. However, in our estimation, all the City's projects, especially the large-scale projects, need to be monitored rigorously, and the departments responsible for them need to establish control mechanisms that can provide a guarantee of the quality and accuracy of the project-related data that is generated and shared with third parties. It is important to realize that, just because a project achieves its objectives, this does not necessarily mean that its implementation is adequately monitored, allowing the City to control every aspect of it.

5. Appendices

5.1. Objective and Evaluation Criteria

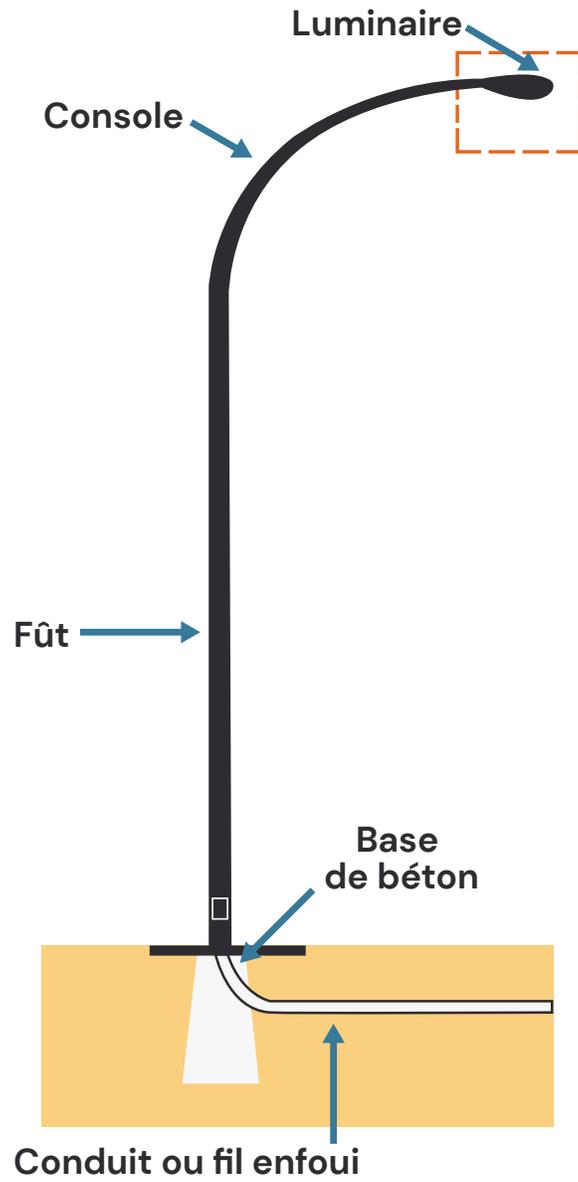
Objective

Ensure that the City's Street Lighting System Upgrade to light-emitting diodes (LED) helps achieve the projected savings in energy and maintenance costs.

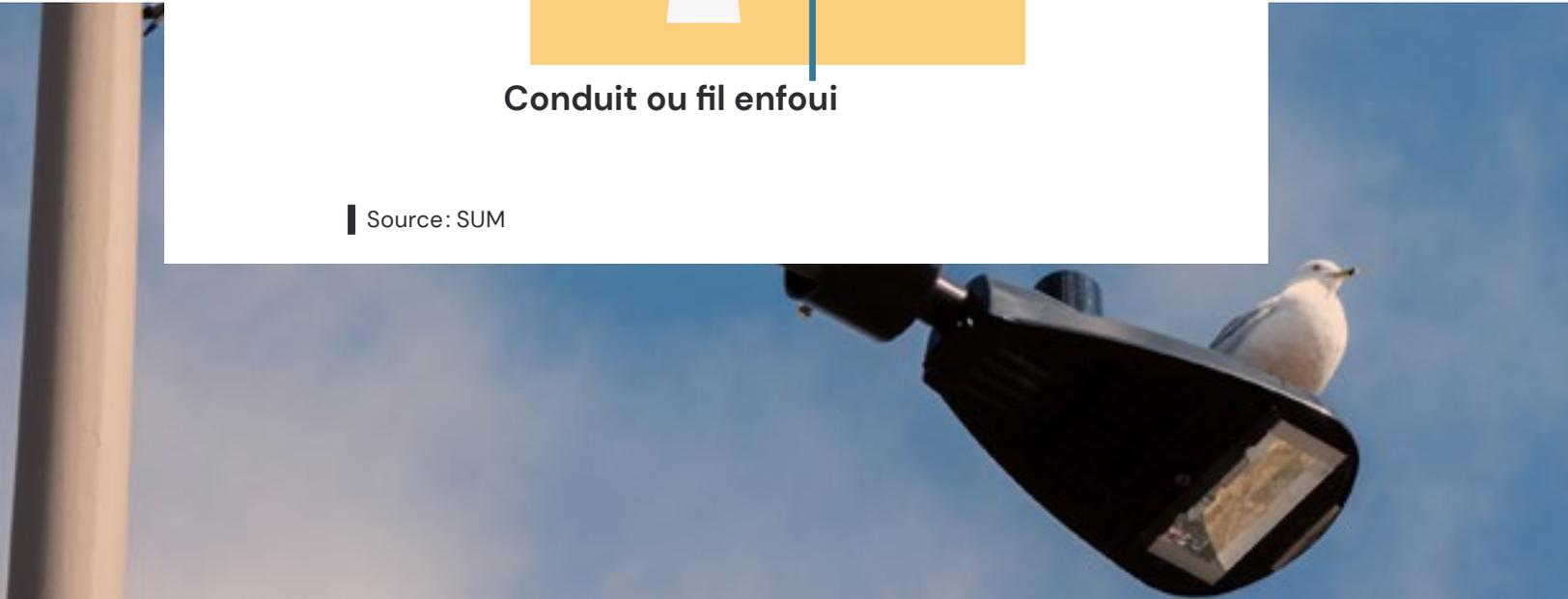
Evaluation Criteria

- The City conducts comparisons of energy costs before and after the lights are converted to LED, in order to assess the savings realized with the new street lighting system.
- The units responsible for the maintenance and repair of lights have access to clear processes and adequate knowledge to ensure that LED lights are repaired quickly and effectively.
- The Project is conducted in a manner consistent with best project management practices promoted by the Bureau des projets et programmes d'immobilisations and the *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux*.

5.2. Diagram of Street Lamp Components



Source: SUM





3.2.

Organic Waste Treatment Plants

April 20, 2021

2020 ANNUAL REPORT

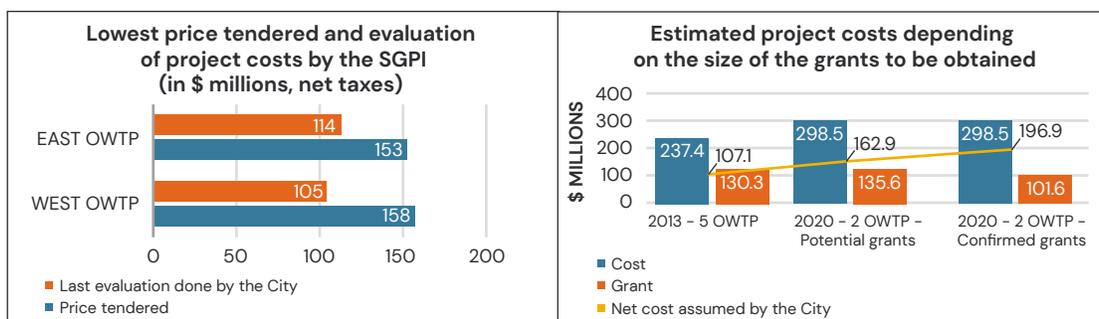
Auditor General of the Ville de Montréal

Organic Waste Treatment Plants

Background

In order to respond to the *Plan directeur de gestion des matières résiduelles de l'agglomération de Montréal 2010-2014* (PDGMR) and become self-reliant in organic waste management, the Ville de Montréal (the City) undertook studies in 2006 that led it, in January 2013, to present to the executive committee (EC) a massive project for the construction and commissioning of five Organic Waste Treatment Plants (OWTPs) including a Centre pilote de prétraitement (CPP). The cost of the project presented to the EC was approximately \$237 million (\$M), for which the City anticipated that it would obtain approximately \$130M in grants from the federal and provincial governments. All but one of the OWTPs was to be operational by the end of 2016; one OWTP was to be operational in 2021.

In 2018, the required investment grew to \$589M. In 2019, the City's EC authorized the granting of two contracts for the production of the West and East OWTPs at a cost of \$298.5M. The decision involved replanning the production of two other OWTPs and the CPP at unspecified future dates. As a result of delays in the project, the City could not obtain all the grants initially anticipated and is now under the obligation to negotiate new agreements with the governments. Thus, in 2020, as a result of increased project costs and reduced grants, the projected net cost of the project for the City should be between \$162.9M and \$196.9M and, as a consequence, might be nearly twice the amount that had been projected six years earlier for the five facilities,¹ while only two will be produced by the end of 2021.



Purpose of the Audit

The purpose of this audit was to ensure that the management of Organic Waste Treatment Plant construction projects is carried out as part of a rigorous process and is adequately monitored.

Results

In light of this overall finding of cost overruns and non-compliance with the timeline, which could have a considerable impact on the total grants originally anticipated from the federal and provincial governments, and considering that the Cadre de gouvernance des projets et des programmes de gestion des actifs municipaux ("Governance Framework") was not complied with completely, and that monitoring and the different accountability reporting processes are incomplete, we conclude that the OWTP construction project was not subject to a sufficiently rigorous process, given the complexity and scope of the project.

¹ In 2013, the net cost of the project to the City for the construction and operation of five OWTPs was to be \$107.1M (\$237.4M – \$130.3M), according to the best-case scenario. In 2020, with the grants confirmed, the net cost to the City should climb to \$196.9M (\$298.5M – \$101.6M) and cover only two OWTPs.

Main Findings

Project Management and Planning

- Some aspects of the Governance Framework pertaining to the planning of projects were not followed.
- Although it was based on studies and forecasts of the City's capacity for organic waste collection over time, it is clear that, the scenario put forth in 2013 was ambitious in terms of organic waste treatment needs, since fewer facilities were now initially required to meet the needs of the population. Thus, the original project, which took into account the requirements and constraints involved in obtaining the full grants from the provincial and federal governments, limited the City's ability to move some OWTP projects forward, while others were delayed.

Mechanisms for Monitoring the Progress of Projects

- Despite the impact of adding two years to the project timeline, the site relocation of the North OWTP from the Complexe environnemental Saint-Michel (CESM) to Rivière-des-Prairies-Pointe-aux-Trembles borough was not the subject of a presentation made to the governance committees to obtain a new execution mandate, as required by the Bureau des projets et programmes d'immobilisations.
- Few risks were identified for this large-scale project and we did not obtain evidence that a risk register was kept up to date.

Accountability Reporting

- While there is accountability reporting to the EC within the context of the project approval process, it was not comprehensive or accurate with respect to information on the differences between the estimated project costs and the bids obtained.
- Concerning the final decision to construct only two OWTPs, there were no quantified analyses of the advantages and disadvantages of the different options presented to the EC, and only the option that was recommended was presented favourably compared with the other options.

In addition to these results, we have made various recommendations to the business units, which are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms

\$M	million of dollars	PDGMR	<i>Plan directeur de gestion des matières résiduelles de l'agglomération de Montréal 2010-2014</i>
BPPI	Bureau des projets et programmes d'immobilisations	PFP	Programme fonctionnel du procédé
BVG	Bureau du vérificateur général	PFT	Programme fonctionnel et technique
CCGPE	Comité corporatif de gestion des projets d'envergure	PTOMBC	Program for the treatment of organic matter through biomethanization and composting
CCPE	Comité de coordination des projets d'envergure	SE	Service de l'environnement
CESM	Complexe environnemental Saint-Michel	SF	Service des finances
CPP	Centre pilote de prétraitement	SGPI	Service de la gestion et de la planification immobilière
CTA	<i>Cities and Towns Act</i>	TCWP	Three-year capital works program
DAP	Dossier d'approbation de projet		
EC	executive committee		
OWTP	Organic Waste Treatment Plant		

Glossary

Anaerobic digester:	process in which organic waste is broken down by microorganisms in the absence of oxygen
Biomethanization:	synonym of anaerobic digester
Composting:	process in which organic waste is broken down by microorganisms in the presence of oxygen
Digestate:	solid organic fraction of matter produced by an anaerobic digester



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1. Background

1.1. History of Residual Waste Management in the Montréal Agglomeration

A little before the year 2000, the Québec government adopted the objective of diverting 60% of its putrescible organic waste (hereinafter the “organic waste”) from landfill. This target first emerged in the *Politique québécoise de gestion des matières résiduelles 1998–2008*. In 2006, in response to this policy, the metropolitan Montréal community adopted its *Plan métropolitain de gestion des matières résiduelles 2006–2017*². The metropolitan Montréal community, in turn, took up the target of diverting 60% of its organic waste from landfill, focusing, however, on housing consisting of eight units and under.

Since then, the Ville de Montréal (the “City”) has embarked on a variety of studies for the purpose of adopting the *Plan directeur de gestion des matières résiduelles de l’agglomération de Montréal 2010–2014* (PDGMR) for the Montréal agglomeration.³ Already in 2006 and 2007, before the urban agglomeration council adopted the PDGMR in 2009, two external studies⁴ produced by the same firm (Firm A)⁵ recommended that the City attempt to achieve autonomy for the Agglomeration in organic waste treatment. It was proposed that the City treat waste by:

- composting food and green waste collected together in West Montréal Island⁶ in a new closed composting plant;
- anaerobic digestion (biomethanization, or biogas production) of food waste in two new facilities and composting green waste collected separately in the East Island in a semi-closed composting plant on the site of the Complexe environnemental Saint-Michel (CESM).

In 2008, the same firm (Firm A) supported the City in the study⁷ of infrastructure component planning for organic waste in the Montréal agglomeration (hereinafter the “Agglomeration”) by taking up the scenario proposed the previous year featuring four facilities (two anaerobic digesters, one closed composting plant and one

² See timeline – P1 in Appendix 5.2, which presents in diagram form a timeline of all the points raised in this Background section.

³ Unless specified otherwise, the PDGMR referred to in this report is the one covering the 2010–2014 period.

⁴ Timeline – C1 and C2.

⁵ A table in Appendix 5.3. summarizes the different contracts awarded to firms and contractors from 2006 to 2019.

⁶ While sectors had been identified for these treatment plants, no specific location had yet been designated, with the exception of the CESM site.

⁷ Timeline – C3.

semi-closed composting plant). The firm estimated that the City should invest \$115 million (\$M) in 2008 dollars to acquire these four plants: \$70M for the two anaerobic digesters together, \$30M for the closed composting plant and \$15M for a semi-closed composting plant⁸ at the CESM. The firm also estimated that three plants could be commissioned over a five-year period.

In November 2009, the Québec government set up a grant program⁹ intended mainly for municipalities in order to provide financial assistance for the construction of a composting and biogas production plant under the *2006–2012 Climate Change Action Plan*. The City's Program for the treatment of organic matter through biomethanization and composting (PTOMBC) covered the equivalent of^{10,11}:

- two thirds (66.7%) of the eligible costs¹² of biogas production projects;
- half (50%) of the eligible costs of composting projects;
- one third (33.3%) of the costs of acquiring bins for the residential collection of organic waste;
- one third (33.3%) of the costs of pre-project studies (business plans, feasibility studies, design plans and specifications).

The PDGMR, which was adopted by the urban agglomeration council in August 2009,¹³ aimed to achieve a diversion rate of 60% of organic waste within the first five years and a diversion rate of 80% by the end of the next five years.¹⁴ The PDGMR focused on sectoral autonomy for the Agglomeration, meaning that it sought, insofar as possible, to reduce exports of residual waste outside the Agglomeration's territory. It also took up the idea of dividing the territory in two, with a combined green and food waste collection service in West Montréal and two separate collections for green waste and food waste in East Montréal. The idea of using four Organic Waste Treatment Plants (OWTPs), identified in 2008, was an integral part of the PDGMR.¹⁵ A fifth facility, the Centre pilote de prétraitement (CPP), which was

⁸ Semi-closed composting involves pretreatment of organic waste through composting in tunnels (closed system), followed by a treatment involving turned windrows (open system).

⁹ Timeline – G1.

¹⁰ The PTOMBC anticipated that if the federal government also participated in the financing of a composting or biogas production project, the assistance granted by the Québec government would be adjusted so that the total assistance received by the municipality did not exceed that anticipated under the PTOMBC.

¹¹ The PTOMBC anticipated that a first instalment of 30% of the grant would be paid after the project was accepted by the Québec government, a financial assistance agreement was signed between the government and the City and the necessary authorizations to produce the project, including environmental authorizations, were obtained.

¹² Eligible costs included those for the acquisition and installation of equipment necessary for treatment, capital costs for the equipment used to refine the biogas produced, and salaries and employee benefits associated with the construction of the required facilities, but excluded such expenses as costs of work performed before January 1, 2008, costs of land purchases, related real property, easements and rights of way, financing costs and interest on loans, and operating expenses of facilities or equipment.

¹³ Timeline – P2.

¹⁴ In 2018, according to the last assessment of organic waste in the Montréal Agglomeration available at the time of our audit, the recovery rate of organic waste was 26%.

¹⁵ Action 5.5 Operate organic waste treatment facilities (green and food waste).

15 to 20 times smaller in size than what would be required to treat the Agglomeration's household waste, would allow the City to conduct trials and tests on a mechanical-biological pretreatment mechanism with the idea of potentially acquiring a larger plant for the purpose of achieving total self-reliance in residual waste management on the Agglomeration's territory. It was announced at the time that the total capital cost of these five facilities would be \$114M (2008 value).

In February 2010, the Government of Québec, together with the Government of Canada, announced¹⁶ that they would contribute a maximum of \$135.5M,¹⁷ or \$67M from the federal government and \$68.5M provided to the City by the provincial government through the PTOMBC. This was an overall grant covering all five of the OWTPs planned by the City, including the CPP¹⁸ since one of the conditions for obtaining the PTOMBC grant was that it should serve at least 70% of residential occupancy units. According to the press release issued at the time, the total costs of these five OWTPs amounted to \$215.5M, which was already \$100M more than the assessment carried out in 2008.

In 2011 and 2012, the City awarded various professional service contracts mainly to conduct:

- the preliminary implementation studies required to support the amendment to the Urban Planning By-law applicable to each of the sites selected for the establishment of OWTPs (Firm B)¹⁹;
- a study of the organic waste potential in the institutional, commercial and industrial (ICI) sectors (Firm A)²⁰;
- a study of potential markets for the compost produced (Firm A)²¹;
- financial studies and the drafting of the financial component of the business plan for the organic waste treatment facility project (Firm C).²²

Thus, in November 2012,²³ the Service de l'environnement (SE), acting as project manager, completed the business plan for the OWTP project. Table 1 shows the OWTPs entered in the business file, along with their anticipated commissioning dates.

¹⁶ Timeline – G2.

¹⁷ It is important to note that this grant also covered the purchase of organic waste collection tools (bins distributed to citizens) for an amount of \$5.2M. However, these tools are not part of the OWTP construction project, which may explain variations in the amounts of the grants covered later in this report.

¹⁸ For simplification purposes, where OWTPs are referred to generally in this report, they include the four OWTPs plus the CPP.

¹⁹ Timeline – C4.

²⁰ Timeline – C5.

²¹ Timeline – C6.

²² Timeline – C7.

²³ Timeline – BP1.

TABLE 1**OWTPs and Their Anticipated Commissioning Dates According to the 2012 Business Plan**

Sector	Technology	Site	Commissioning date
North	Composting	CESM (Villeray–Saint-Michel–Parc–Extension borough)	End of 2016
South	Biomethanization	LaSalle borough	2021
East	Biomethanization	Montréal–Est	End of 2016
West	Compostage	Saint-Laurent borough	End of 2016
N/A ^[a]	Biomethanization	Montréal–Est	End of 2016

^[a] Not applicable. It was planned that the CPP would test residual waste treatment technologies and not serve any specific sector in the Agglomeration.

Table 2, drawn from the November 2012 business plan, shows the cost evaluation carried out by the SE to provide the City with five OWTPs. As mentioned previously, the PTOMBC does not apply to operating expenses, only to expenses appearing under the heading “Capital costs.” Therefore, since the SE anticipated that it would obtain all the grants available, these grants would account for 54.9% of the capital costs.

TABLE 2

Financial Evaluation of the OWTP Project According to the November 2012 Business Plan

Cost category	Costs ^[a]	Details
Capital costs	\$237.4M ^[b]	<ul style="list-style-type: none"> • Three-year capital works program (Agglomeration).
Revenues ^[c]	(\$87.1M)	<ul style="list-style-type: none"> • Sale of compost • Royalties from the industrial, commercial and institutional sectors
Avoided expenses ^[c]	(\$309.4M)	<ul style="list-style-type: none"> • Biogas consumption • Landfill costs for organic waste • Reduction in transportation (fuel costs)
Operating expenses ^[c]	\$623.6M	<ul style="list-style-type: none"> • Operating budget (boroughs and related municipalities)
Subtotal	\$464.5M	
Government grants	(\$130.3M)	<ul style="list-style-type: none"> • Green Infrastructure Fund (Federal) • PTOMBC (Provincial)
Net total	\$334.2M	

^[a] Including net taxes, contingencies and provisions for risks.

^[b] Including a provision of \$14.8M for the acquisition of land for the South and West OWTPs, and a cost adjustment to take inflation into account.

^[c] Evaluation carried out up to 2041.

Source: Service des infrastructures, du transport et de l'environnement – Direction de l'environnement, Business plan of the Montréal agglomeration's organic waste treatment plants, November 2012.

In July 2012, the Government of Québec revised the PTOMBC to create a second phase.²⁴ Phase II of the PTOMBC requires that projects be completed and operational no later than September 30, 2019. In phase II, the percentages of eligible expenses covered remained the same as in phase I, but the eligible expenses itself is capped at:

- \$125/tonne of sludge from water treatment plants to be treated per year by biomethanization;
- \$800/tonne of other organic waste per year to be treated by biomethanization;
- \$600/tonne of organic waste per year to be treated by open composting;
- \$300/tonne of organic waste per year to be treated by closed composting;
- \$100/residential bin required for the collection of organic waste.

Since the City submitted a request to the PTOMBC while Phase I was in effect, it was not subject to these eligible expense limits.

In the business plan produced at the end of 2012, and later in the presentation made to the City's executive committee (EC) at the end of January 2013 for the purpose of obtaining the execution mandate,²⁵ the SE outlined the different management modes for the OWTPs selected: 1) Design–Construction–Maintenance–Operation (the "DCMO") whereby a single contracting authority is responsible for the project and operations as a whole during a given period; 2) Design–Construction followed by Maintenance–Operation (the "DC+MO"), whereby one contracting authority is responsible for project design and construction while another contracting authority is responsible for its maintenance and operation during a given period. Table 3 shows the management mode of each OWTP.

²⁴ Timeline – G3.

²⁵ Timeline – DAP1.

TABLE 3

Management Mode of the Different OWTPs
(2012 Business Plan and January 2013 Presentation to the Executive Committee)

OWTP	Management mode planned by the Service de l'environnement
East OWTP	DCMO ^[a]
South OWTP	DCMO
North OWTP	DC+MO ^[b]
West OWTP	DCMO
CPP	DC+MO

^[a] Design–Construction–Maintenance–Operation all covered in a single contract.

^[b] Design–Construction covered by an initial contract, followed by Maintenance–Operation covered by a second contract.

This presentation of the business plan parameters is a mandatory requirement for obtaining authorization from the EC to proceed with the work, which consists primarily in granting a supporting mandate for the development of project specifications, a mandate for a construction economist to assess the construction costs, all for the purpose of launching calls for tenders to produce different OWTPs.

In April 2013, a contract was awarded to Firm D²⁶ to obtain construction economics services as part of the East, West and North OWTP projects and the CPP. However, the fulfilment of this mandate was contingent upon the results of another mandate granted to Firm B, also in April 2013, for the preparation of specifications for the same plants.²⁷ This firm was to produce the Programme fonctionnel du procédé (PFP), which describes the requirements for organic waste treatment processes, and the Programme fonctionnel et technique (PFT), which describes the requirements associated with the building (e.g., structure, heating, ventilation, electricity, water management) on the basis of which Firm D would prepare cost estimates for the different OWTPs.²⁸

Nevertheless, the production of the PFP required more time than anticipated, considering [TRANSLATION] “the complexity and scale of the projects”, according to a decision-making summary produced by the City, with the result that the SE anticipated that it would need to conduct preliminary studies up to March 2016, and review the design and construction bids in July 2016 rather than in July 2013. Firm B, with the budget provided to fulfil its mandate, was unable to produce the PFT that would enable Firm D to prepare the construction cost estimate. The contract with

²⁶ Timeline – C8.

²⁷ Timeline – C9.

²⁸ According to the *Alberta Association of Architects*, the PFT defines the nature, services, scale, functions and space needs of a project in a sufficiently detailed manner as to allow the design or approvals to move forward.

Firm D was therefore cancelled in May 2015.²⁹ Still, the City paid Firm D 35.7% of the value of the contract to cover the work that it had already done.

While Firm B was fulfilling its mandate, the North OWTP project was relocated from the CESM to Rivière-des-Prairies-Pointe-aux-Trembles borough. The February 2015 report produced by the Office de consultation publique de Montréal³⁰ on the establishment of such an OWTP in this borough states that the site change was due to an administrative decision to no longer build the North OWTP at the CESM. It should be noted that during the 2013 municipal election campaign, the winning mayoral candidate had promised not to build the North OWTP at the CESM and to find another site.

In June 2015, the month following the cancellation of the contract with Firm D, a tender management contract was granted for the OWTP infrastructure project.³¹ In particular, the mandate consisted in:

- producing and aligning the tender documents;
- drafting the PFT for the buildings and site layout for each OWTP while taking into account and adhering to the PFP;
- producing the design plans and specifications for the establishment of all sites;
- producing the design plans and specifications of all the OWTP buildings;
- providing the City with the parameters for assessing all aspects covered in this mandate.³²

It was Firm E that obtained this contract. It should also be noted, however, that since this was a firm specializing in architecture, it enlisted the engineering services of Firm B, the very same firm that had been unable to produce the PFT with the budget estimated by the SE for executing the mandate.

It should also be specified that although Firm E was the lowest compliant bidder, its offer of \$1.5M was 87.2% higher than the City's last estimate for this contract. In the decision-making summary presented to the urban agglomeration council, the SE explains that two thirds of the cost overrun could be attributed to an underestimation of the professional resources required. The SE had estimated that the effort required was 5,400 hours, while the two bidders estimated that they would need about 8,000 hours. The remaining third could be explained by an underestimation of the support needed by professionals during the tendering process.

²⁹ Timeline – C10.

³⁰ Timeline – W1.

³¹ Timeline – C11.

³² This deliverable corresponds to what firm D was to do and for which the City cancelled the contract, nevertheless paying 35.7% of the firm's fees.

Under the Partnership Agreement with municipalities concluded in 2015,³³ the Government of Québec postponed the deadline for commissioning all projects subsidized by the PTOMBC to December 31, 2022.

From February 2017 to January 2019, the SE presented updates of the business plan to the various decision-making authorities for large-scale projects³⁴ for the purpose of obtaining authorization to proceed with the work. Table 4 gives details on changes in infrastructure costs when these presentations were made to the EC.

TABLE 4

Changes in OWTP Infrastructure Costs Presented by the Service de l'environnement to the Executive Committee

Date of presentation to executive committee	Infrastructure costs presented	Justification of discrepancy from the previous presentation ^[b]
January 30, 2013 (timeline – DAP1)	\$223M ^[a]	-----
April 12, 2017 (timeline – DAP2)	\$344M	+ \$23M for inflation, + \$98M for additional elements (land, CESM site change, specification requirements)
October 17, 2018 (timeline – DAP3)	\$589M	+ \$13M for inflation, + \$231M for adjustments to bid received
January 23, 2019 (timeline – DAP4)	\$331M	Contracts granted for only two OWTPs, rehabilitation of the LaSalle borough site and new planning for the other three OWTPs

^[a] In the presentation delivered on January 30, 2013, the infrastructure costs amounted to \$237M, including \$14.8M for land. The facilities to be constructed amounted to \$222.5M. Since the land acquisition cost was added to the 2017 presentation, a decision was made not to present the original estimate costs in the 2013 value. (The SE proceeded in the same way in the historical background of the project that was presented to the EC in 2017.)

^[b] The values were taken from documents obtained from the SE in which the values had been rounded off. Therefore, the totals may not correspond from one year to the next.

Source: SE and Service de la gestion et de la planification immobilière (SGPI), presentation made to the EC on January 23, 2019, for a project change approval.

At the same time as these presentations were being made to the EC, the City launched three calls for tenders, from May to July 2017, to select firms for the completion of the three OWTPs, all in DCMO management mode (as previously stated, the decision to complete the

³³ Timeline – G4.

³⁴ The Comité corporatif de gestion des projets d'envergure (CCGPE), the Comité de coordination des projets d'envergure (CCPE) and the City's executive committee.

projects in DCMO mode had already been made when the business plan was developed at the end of 2012; a change in management mode for the North OWTP is nevertheless noted following the site relocation). The calls for tenders were for the North (Rivière-des-Prairies–Pointe-aux-Trembles borough),³⁵ East (Montréal-Est)³⁶ and West (Saint-Laurent borough) OWTPs.³⁷ Table 5 shows the results of the lowest compliant bidder's offer for the three calls for tenders.

TABLE 5

**Results of DCMO Tender Management Contracts for Three OWTPs
(All Prices Include Net Taxes)**

		North OWTP	East OWTP	West OWTP
Number of bidders		1	1	2
Lowest compliant bidder		Operator A	Operator B	Operator B
Total price for DCMO	Price tendered	\$103.7M	\$152.6M	\$158.3M
	Estimate ^[a]	\$75.5M	\$113.5M	\$105.0M
	Difference	37.4%	34.4%	50.8%
Price for design and construction (DC)	Price tendered	\$84.0M	\$121.5M	\$132.7M
	Estimate	\$56.6M	\$73.4M	\$78.2M
	Difference	48.4%	65.5%	69.7%
Price for maintenance and operation (MO)	Price tendered	\$19.7M	\$31.1M	\$25.6M
	Estimate	\$18.9M	\$40.1M	\$26.8M
	Difference	4.2%	-22.3%	-4.5%

^[a] Last estimate done by the SGPI, with ±30% accuracy for design and construction costs.

Source: SE and SGPI – Approval of project changes, January 23, 2019

In August 2017,³⁸ when the regulatory framework for the PTOMBC was being updated, the Government of Québec revised the deadline for implementing the construction of the City's second biogas production plant, the South OWTP (LaSalle borough). At that time, the City had until June 30, 2026, to make this OWTP operational, in order to allow optimum coordination between the evolution of the performance of the collection of organic waste and the increased waste treatment capacity on the Agglomeration's territory. It was then agreed that the three other OWTPs and the CPP still had to be operational by December 31, 2022.

³⁵ Timeline – C12.

³⁶ Timeline – C13.

³⁷ Timeline – C14.

³⁸ Timeline – G5.

Finally, in June 2018, one call for tenders was launched³⁹ to retain the services of a firm for quality control of the implementation of the OWTPs. The City received only one bid, from Firm B, the very same one that was doing subcontract work for Firm E when plans and specifications were being prepared for DCMO tender for three OWTPs. Initially, Firm B's offer was 36.9% higher than the City's estimate. Firm B revised its offer, and the difference was reduced to 27.3%. The SGPI states that this difference is due to an underestimate of the [TRANSLATION] "time and effort required to execute industrial projects." In March 2019, this \$4.3M contract, to be executed over a five-year period, was granted to Firm B.⁴⁰

Following the last presentation made to the EC in January 2019, the DCMO tender management contract for the North OWTP (Rivière-des-Prairies-Pointe-aux-Trembles borough) was cancelled in February 2019,⁴¹ while the DCMO tender management contracts for the West (Saint-Laurent borough) and East (Montréal-Est) OWTPs were granted in February 2019 and August 2019, respectively.⁴² The reasons given by the SE to explain the decision to cancel the contract for the North OWTP (Rivière-des-Prairies-Pointe-aux-Trembles borough) was that it considered that the quantities of organic waste collected in 2018 and 2019 did not yet justify keeping three OWTPs operational, and that the City could maintain contracts for treating organic waste in private facilities.

Finally, after we conducted our audit, in October 2019,⁴³ the City entered a period of public consultation to gather comments about a draft version of its new *Plan directeur de gestion des matières résiduelles* for the 2020–2025 period. It emerges from this new plan that the City plans to construct only two OWTPs by 2025: the West OWTP (Saint-Laurent borough), to be completed in 2021, and the East OWTP (Montréal-Est), to be completed in 2022, which is in agreement with the presentation delivered by the SE to the EC in January 2019.

Thus, between the first presentation made to the EC in January 2013 for the purpose of obtaining the first approval to fulfil the mandate and the last presentation that we noted in our audit in January 2019, the investment costs increased by 48.4%, but to build only two of the five OWTPs planned and complete the rehabilitation of the LaSalle borough site. In order to construct the five OWTPs as planned, the investment costs would have been 164.1% higher.

³⁹ Timeline – C15.

⁴⁰ Timeline – C16.

⁴¹ Timeline – C17.

⁴² Timeline – C18 and C19.

⁴³ Timeline – P3.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act (CTA)*, we completed a performance audit mission on Organic Waste Treatment Plants. We performed this mission in accordance with the *Canadian Standard on Assurance Engagement (CSAE) 3001*, described in the *CPA Canada Handbook – Certification*.

The purpose of this audit was to ensure that the management of Organic Waste Treatment Plant construction projects is carried out as part of a rigorous process and is adequately monitored.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control (CSQC) 1* from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit work focused on the period from January 1, 2012, to September 30, 2019. However, for some aspects, data prior to this period was also considered. It was primarily completed from September 2019 to February 2020. We also took into account information that was sent to us up to April 2021.

The work was primarily performed with the following business units:

- SE – Direction de la gestion des matières résiduelles – Division soutien technique et infrastructure CESM;
- SGPI – Direction de la gestion de projets immobiliers – Division des projets industriels.

Upon completing our audit, we submitted a draft audit report to the managers concerned within the SE and the SGPI for discussion purposes. The final report was then forwarded to the management of each business unit involved in the audit to obtain action plans and timelines for implementing the recommendations concerning it, as well as to the Direction générale, the deputy director-general of Qualité de vie and the deputy director-general of Services institutionnels.

3. Audit Results

3.1. Management and Planning of Organic Waste Treatment Plant Projects

3.1.1. Compliance with the Governance Framework for Large-Scale Projects

In April 2010, the City acquired a *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux* (hereinafter "Governance Framework"). This framework is based on best management practices. It was initially applicable to projects, especially municipal asset management projects, requiring investments of \$10M and over. It has been revised several times, once to increase the limit to projects with investments of more than \$50M or annual investments of more than \$10M. With investments of \$114M for the five OWTPs announced in the PDGMR and approved by the urban agglomeration council in August 2009, this project was therefore covered by the Governance Framework. The purpose of complying with the Governance Framework is to:

- clarify the processes of making decisions and establishing priorities;
- increase the City's control over strategic decisions about projects and programs;
- ensure a sufficient level of cooperation for decisions to be made in the best interest of the City and the public;
- ensure that information is shared to allow joint monitoring of projects and programs;
- ensure the effectiveness, integrity, rigour and coherence of municipal actions.

The life cycle of a large-scale project is divided into five phases: 1) justification for the project; 2) project initiation; 3) planning; 4) execution; and, finally, 5) project closure. Since it was anticipated that the OWTP project would be executed in the Design-Construction-Maintenance-Operation management mode, the execution phase is handled by the contractor-operator. Table 6 shows the current phase of the different OWTPs as of September 4, 2019, according to the Bureau des projets et programmes d'immobilisations (BPPI). The West (Saint-Laurent borough) and East (Montréal-Est) OWTPs have been in the execution phase since the SE obtained the authorization to execute the project from the EC in January 2013. In actual fact, as of this date, the execution authorization had been obtained for all the OWTPs, but as a result of various changes made since then, the new presentations made to the EC in 2017, 2018 and 2019, and the decision to cancel the call for tenders for the production of the North OWTP in DCMO mode (Rivière-des-Prairies-Pointe-aux-Trembles borough), this OWTP, the South OWTP (LaSalle borough) and the CPP of Montréal-Est went back to the planning stage of the project life cycle.

TABLE 6

Current Project Management Phase for the Different OWTPs Planned by the Service de l'Environnement

OWTP	Current phase ^[a]	Since	Large-scale project completion date
West OWTP – Saint-Laurent borough	Execution	January 2013	2021
North OWTP – Rivière-des-Prairies–Pointe-aux-Trembles borough	Planning	January 2019	ND ^[b]
South OWTP – LaSalle borough	Planning	January 2019	ND
East OWTP – Montréal-Est	Execution	January 2013	2021
CPP Montréal –Est	Planning	January 2019	ND

^[a] Information obtained on September 4, 2019, that was still valid when the report was issued.

^[b] Not determined.

Source: BPPI.

To proceed from one phase to the next, the Service project manager must update or file a Dossier d'approbation de projet (DAP) with two different authorities in succession:

- the Comité corporatif de gestion des projets d'envergure (CCGPE)⁴⁴;
- the Comité de coordination des projets d'envergure (CCPE).⁴⁵

The CCGPE has only the power to recommend the large-scale project to the CCPE. The CCPE, for its part, has the power to decide whether a project can proceed to the next phase, except for the transition from the planning phase to the execution phase, in which case the CCPE recommends that the EC proceed with the large-scale project, whereupon the EC gives the mandate to execute the project.

⁴⁴ The CCGPE consists of the director general, all deputy directors-general, the director of Service des finances, and the director of the BPPI.

⁴⁵ The CCPE consists of the director general, the deputy director-general of Services institutionnels, the director of the BPPI and eight elected officials.

In accordance with the Governance Framework, the SE is the requesting department, while the SGPI is the executor of this large-scale project. For the SE, this means that the person designated as the project manager in this department is responsible for the execution of all phases of the project, acts as the City's main contact both internally and externally, and is accountable for the management of the project in terms of compliance with the commitments agreed upon, the rules and the City's policies.

The Governance Framework contains seven operating rules governing the following:

- business plan at the transition points;
- cost estimating;
- financial aspects of projects;
- consultation, public affairs and communications;
- procurement strategies and rules;
- contract execution and management;
- audits of management systems.

With respect to the operating rules governing the business plan at transition points and consultation, public affairs and communications aspects, we obtained evidence that the SE complies with the Governance Framework requirements, except in the case of the presentation of a business plan that is amended at the time of a major change; this point is addressed further on in this report. With respect to the operating rule governing audits of management systems, this is not a responsibility of the business units audited, and we therefore did not consider it. For all other operating rules, our findings are as follows:

Operating Rule for Cost Estimating

Based on relevant evidence that we obtained from the different departments audited, the cost estimating rule in the Governance Framework is not followed. According to this rule, *[TRANSLATION] "control estimates are made by third parties separate from those that prepared the calls for tenders and the detailed cost estimates, in order to confirm bid prices."* However, in the case of calls for tenders for the production in DCMO mode of the West (Saint-Laurent borough) and East (Montréal-Est) OWTPs, although the cost estimates were initially made by Firm E, in the SGPI's opinion, the dimensions used for estimates did not correspond *[TRANSLATION] "to an optimized vision of the usual program"* and *[TRANSLATION] "certain special technical requirements provided for in the PFT were applied indifferently to the specific needs of each sector of the plant,"* prompting a re-evaluation of the costs by this department at the end of 2016, or before calls for tenders were launched, from May to July 2017. We obtained evidence that the SGPI subsequently revised the cost estimates at least once, for the West OWTP (Saint-Laurent borough) and the East OWTP (Montréal-Est) in May and June 2018 respectively. Later, once again, it was the SGPI that evaluated the justifications for the discrepancies between the City's estimate and the price tendered by the lowest

compliant bidder. This way of operating does not comply with the operating rules of the Governance Framework for large-scale projects and does not allow for an accurate, independent evaluation of the bidder's price in relation to what the City was planning for the production of this project.

Operating Rule for Financial Aspects

According to the SE, the Service des finances (SF) was involved right from the start of the project—including when the business plan was produced in 2012, while Firm C was conducting the market study, in the procedure for evaluating the project management mode (the evaluation of the appropriateness of using a DCMO management mode), and in the Three-year capital works program (TCWP) funding. According to the Governance Framework, the SF must validate the financial analysis models and propose funding optimization strategies for projects and their budget impacts. While it is true that the SF collaborated with the SE up to 2019, in particular by providing interest and indexation rates to be used for financial analyses concerning TCWP loans, it cannot be argued, based on the evidence we obtained, that the SF participated in a final financial analysis of the project and an examination of different funding optimization strategies for the project before the SE presented it to the EC. Considering that part of the SF's mission is to perform strategic consulting activities in the financial field in accordance with best governance, management and control practices, that the execution mandate that the SE wanted to obtain from the EC for this project was significantly different from the one presented in 2013, that there had been an issue around obtaining the full grant, and that the value of this project was \$298.5M, we think that the SE should have ensured that the SF participated in the final validation of the financial analysis model and the examination of funding optimization strategies for this project.

Operating Rule for Procurement Strategies and Rules

We identified deficiencies in the area of compliance with the procurement rules that form the basis of another operating rule in the Governance Framework. Indeed, the CTA states that the City must estimate the price of any contract that includes an expenditure of \$100,000 or more prior to the opening of bids,⁴⁶ and although the City produced cost estimates prior to the calls for tenders, we noted that it continued to change its estimates following the opening of technical proposals for bids (Envelope no. 1),⁴⁷ mainly for the purpose of taking into account budget changes brought about by tender appendices.⁴⁸ In fact, in the case of the West OWTP (Saint-Laurent borough), the call for tenders ended on May 15, 2018, and the opening of technical proposals for the bids received (Envelope no. 1) also took place on that day. The SGPI estimate used to analyze the offers received is dated May 29, 2018, which

⁴⁶ LCV, CQLR, c.19, section 477.4.

⁴⁷ The legal text makes no distinction in cases where the contract awarding method is to use two envelopes (technical and price) and for which the envelopes are opened on different dates.

⁴⁸ Considering that the last appendix for the West OWTP was published on April 20, 2018, and that the call for tenders ended on May 15, 2018, and that the last appendix for the East OWTP was published on May 25, 2018, and the call for tenders ended on June 19, 2018, the City would have had the time to revise its estimates based on the appendices published.

is after the receipt of offers. For the East OWTP (Montréal-Est), the call for tenders ended on June 19, 2018, and the opening of technical proposals for bids took place the same day. The document developed by the SGPI for the estimated cost of the project, which was considered to be the City's last estimate, is dated June 28, 2018, or following the opening of technical proposals for bids. This way of proceeding can give the appearance of non-compliance with the CTA.⁴⁹ While changes may have been made to the estimate documents after the bid opening date, we were still able to confirm that the price envelopes (Envelope no. 2) were opened on subsequent dates: June 11, 2018, for the West OWTP, and July 16, 2018, for the East OWTP.

In order to determine the most appropriate market solicitation process, the SE focused on the issue in 2011 and, for this purpose, had consulted the City's Service des affaires juridiques, which, instead of recommending a two-step procedure, i.e., qualifications followed by a call for proposals, recommended taking [TRANSLATION] "the safest and quickest route,"⁵⁰ which was a single-step process. Later on, a market survey, which Firm C produced in 2012 for the SE, concluded that it would be appropriate for the City to clarify aspects of the procurement strategy, especially the division of the procurement process into a call for qualifications and a call for projects. However, on June 16, 2017, before the start of the tender process, the *Act respecting the Communauté métropolitaine de Montréal*⁵¹ was amended following enactment of the *Act mainly to recognize that municipalities are local governments and to increase their autonomy and powers*,⁵² thereby allowing a bid solicitation process that included discussions in the case of insurance, service, construction work or procurement contracts. The advantage of such a procurement strategy is to [TRANSLATION] "clarify the project technically or financially and allowing tenderer to submit a final bid to reflect the outcome of the discussions"⁵³. In return, if it proved to be a process that could put off some potential bidders because it required greater effort on their part but provided no guarantee of winning the contract, the Act provided, following preliminary approval by the Minister of Affaires municipales et de l'Habitation, that the City would have to pay financial compensation to each tenderer for work performed in the context of discussions.⁵⁴

In view of Firm C's 2012 recommendation that other tender strategy options be examined, and the adoption of the regulation that opened up the way for discussions in the tender process, and considering that the advisory capacity of the Service des affaires juridiques does not cover this type of call for tenders, we think that the SGPI should have examined the possibility of launching such a call for tenders, which could have attracted more bidders and also would have provided the City with offers more directly aligned with the City's need for the OWTPs concerned. Since this regulatory amendment was made before the publication of the call for tenders for the East OWTP (Montréal-Est) (June 29, 2017) and the publication of the

⁴⁹ The Act does not specify whether the estimate must be finalized before the opening of technical proposals (Envelope no. 1) or the opening of price proposals (Envelope no. 2).

⁵⁰ Message between the Service des affaires juridiques and the SE, August 12, 2011.

⁵¹ *Act respecting the Communauté métropolitaine de Montréal*, CQLR, c. C-37.01, section 112.0.0.1.

⁵² *Act mainly to recognize that municipalities are local governments and to increase their autonomy and powers*, 2017, Chapter 13.

⁵³ *Act respecting the Communauté métropolitaine de Montréal*, CQLR, c. C-37.01, section 112.0.0.1.

⁵⁴ *Ibid.*

call for tenders for the West OWTP (Saint-Laurent borough) (July 18, 2017), the bid solicitation approach that included discussions could have applied to these OWTPs.

Operating Rule for Contract Execution and Management

For this operating rule, the Governance Framework states that throughout the project, such key areas as responsibility sharing, change management and monitoring, verification of work carried out and actual payment costs need to be taken into account. We noted that after the contract for preparing PFPs and PFTs was granted to Firm B in 2013, for all calls for tenders launched at one stage or another of the process leading to the construction of the OWTPs, the bids obtained by the City were greater than the latest estimates (see Table 7).

More specifically, we questioned what justification there could be for a difference between the City's estimate and a lowest compliant bidder's price that was nearly twice as high (87.2%), and whether the principle of this operating rule of the Governance Framework was followed. This call for tenders,⁵⁵ won by Firm E, with outsourcing to Firm B, concerned professional architecture and engineering services for the launching of calls for tenders for an organic waste treatment facility project. The technical specifications, much like the cost estimate, were developed by the SE. However, the services covered by this call for tenders include (but are not limited to):

- drafting PFTs for buildings and developing sites for each OWTP according to the usual format and content for PFTs, while taking the PFPs into consideration;
- identifying criteria for the urban and architectural integration of each OWTP;
- conducting an evaluation of an existing building on the site of the Saint-Laurent borough OWTP and conducting an analysis of the configuration of the access road;
- identifying connection points at the OWTP site of Rivière-des-Prairies-Pointe-aux-Trembles borough and calculating service capacities;
- producing design plans and specifications for the buildings of all OWTPs.

It is surprising to note that it was the SE that developed these technical specifications and prepared the cost estimate before the call for tenders was launched. We would have expected the SGPI to be the body responsible for these activities for the purpose of publishing them in this call for tenders. A perusal of the decision-making summary presented to the urban agglomeration council to authorize the awarding of the contract raises all the more questions for us. According to that document, the total difference between the bid and the estimate is \$700,772; two thirds of this amount is justified by the fact that the SE had estimated that the effort required was 5,400 hours while the two winning bidders estimated that they needed 8,000 hours to perform the mandate. The greatest differences in terms of estimated hours were in the areas of the design plans and PFTs of buildings. We feel that the sharing of responsibilities in what led to the performance of this contract was deficient. Furthermore, while the SE was the party that requested this

⁵⁵ Timeline – C11.

overall OWTP project, the SGPI, as the party performing the contract, can take on the responsibility of preparing calls for tenders, always in collaboration with the Service de l’approvisionnement. According to the Governance Framework, in cases where there are multidisciplinary teams from various municipal departments, the departments [TRANSLATION] “assume full leadership and responsibility in their [respective] fields.” The SGPI prepared the other three calls for tenders in Table 7 and estimated the cost of services for them.

TABLE 7

Difference Between the Price Tendered by the Lowest Compliant Bidder and the Ville de Montréal’s Estimate

Type of service required	Item number on the timeline in appendix 5.2.	Lowest compliant bidder	Difference between bid and City’s estimate
Contract for the launch of the calls for tenders	C11	Firm E, with Firm B under subcontract	+ 87.2%
DCMO contract for the Montréal-Est OWTP	C13	Operator B	+ 34.3% ^[a,b]
DCMO contract for the OWTP of the Saint-Laurent borough	C14	Operator B	+ 51.2% ^[a]
Quality control contract for the implementation of the OWTPs	C15	Firm B	+ 36.9% ^[c]

- ^[a] This difference is the one before the SGPI reviewed its estimate to adjust it on the basis of the parameters and distinct features of the lowest compliant bid.
- ^[b] Since the City received only one bid for the East OWTP, it also negotiated with the bidder to revise its price. In the end, there was a 31% difference between the revised price and the City’s last estimate.
- ^[c] This difference is the one before negotiations took place with the bidder leading to a revision of the price submitted and thereby reducing the difference between the bid and the City’s estimate to 27.3%.

3.1.1.A. Recommendation

We recommend that the Service de l'environnement and the Service de la gestion et de la planification immobilière ensure, for future Organic Waste Treatment Plants for which the production contract has not yet been awarded, that the control estimate of bidders' prices in a call for tenders is prepared by third parties separate from those that prepared the calls for tenders and detailed cost estimates, in order to comply with the Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux.

3.1.1.B. Recommendation

We recommend that the Service de l'environnement and the Service de la gestion et de la planification immobilière ensure that the financial models used to estimate the production costs of future Organic Waste Treatment Plants for which the production contract has not yet been awarded, as well as the assumptions on which they are based, are validated by the Service des finances.

3.1.1.C. Recommendation

We recommend that the Service de l'environnement and the Service de la gestion et de la planification immobilière ensure that the last estimate of the production costs of future Organic Waste Treatment Plants for which the production contract has not yet been awarded is produced prior to the bid opening date, in order to comply with the *Cities and Towns Act*.

3.1.1.D. Recommendation

We recommend that the Service de l'environnement, for future Organic Waste Treatment Plants for which the production contract has not yet been awarded, delegate the work of preparing technical specifications and cost estimates to the right business unit based on its expertise and ensure compliance with the Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux.

3.1.2. Planning Organic Waste Treatment Plant Projects

As early as 2008,⁵⁶ the organic waste treatment facility project on the City's territory was seen as a single project consisting of four OWTPs (the concept of the CPP was added later). The business plan developed in 2012 likewise presented this undertaking as a single project, this time including the CPP. There is a certain logic in referring to these OWTPs as integrated projects, mainly because of the interactions that can take place among them. In fact, the composting plant at the West OWTP (Saint-Laurent borough), in addition to treating food and green waste in the sector, must also treat part of the digestate⁵⁷ produced by the South OWTP (LaSalle borough). And the North OWTP (Rivière-des-Prairies–Pointe-aux-Trembles borough) will treat part of the digestate of the South OWTP and all of the digestate of the East OWTP (Montréal-Est) by composting. According to the regulatory framework of the Québec government's PTOMBC, the second financing payment, which accounts for 50% of the total grant, is paid [TRANSLATION] "within 90 days following receipt [...] of proof that the facility was commissioned." The third and final payment (20% of the grant) is paid if at least 70% of the residential occupancy units on the City's territory are served by an organic waste collection service within five years after the facilities are commissioned. In addition, the federal government requires that federal approval of the project be obtained in principle prior to any construction and any awarding of a contract for the construction of OWTPs. This approval was obtained on March 10, 2017, following finalization of the file for the site of the North OWTP (Rivière-des-Prairies–Pointe-aux-Trembles borough). Also, according to the latest version of this regulatory framework, which dates from August 2017, the City must also ensure that the CPP and the OWTPs are operational by the end of 2022, with the exception of the South OWTP (LaSalle borough). The date set by the government for making the South OWTP operational is June 30, 2026. Because of the very nature of the requirements of the PTOMBC and the federal government, the awarding of the full grant from both levels of government is therefore dependent on producing the integrated project as a whole, not specifically on each individual OWTP. Nevertheless, it was not until the SE made the October 2018 presentation to the EC that the concept of the risk of not obtaining the full grant for Phase 1 OWTPs⁵⁸ because of construction delays was first brought up.⁵⁹

⁵⁶ Timeline – C3.

⁵⁷ Product derived from the anaerobic digestion of organic waste, which, most of the time, must undergo additional treatment (composting or other) in order to be considered biologically stable and hygienic.

⁵⁸ West OWTP (Saint-Laurent), East OWTP (Montréal-Est), North OWTP (Rivière-des-Prairies–Pointe-aux-Trembles) and the CPP in Montréal-Est.

⁵⁹ The business plan developed in 2012 refers to the risk of not obtaining the federal grant because of the short tight deadline for obtaining it and to correspondence that the City received from the Québec government that showed that it shared the same concern as the federal government.

In early 2019, upon presentation of the facts by the SE, the EC had accepted the CCPE's recommendation that only the West and East OWTPs (Saint-Laurent borough and Montréal-Est) be constructed by the end of 2021 and that all other OWTPs including the CPP, be replanned. The execution mandate awarded to the SE also included the task of negotiating with the Ministère de l'Environnement et de la Lutte contre les changements climatiques to [TRANSLATION] "maximize the amount of the PTOMBC grant."⁶⁰ While the presentation made to the EC in January 2019 for the purpose of obtaining this execution mandate states that it would be necessary to negotiate with this Ministry, it is necessary to consult the 25th and final page of the presentation's appendices to measure the potential impacts, according to the SE, of commissioning only two OWTPs before the end of 2021. In the SE's estimation, the grants that will be obtained might only range from \$43.7M to \$65M, compared with the full \$130.3M grant that was initially anticipated. In our opinion, the risk of not obtaining the full grant from the federal and provincial governments should have been presented in a much more explicit manner to elected officials.

At the time of our audit, nearly a year after the EC mandated the SE to negotiate with the Québec government to maximize the grants obtained, the SE was unable to provide us with any document or minutes of any meeting with the Ministère de l'Environnement et de la Lutte contre les changements climatiques to show the progress made in discussions and define the range of grants that the City might receive.⁶¹

Table 8 shows changes in the number of OWTPs planned by the City and the net cost of producing them, based on the grants expected as of the date on which the execution mandate was obtained in 2013, when elected officials authorized the construction of the West and East OWTPs, in 2019, and finally in 2020, following our audit, when additional evidence was obtained from the SE. Thus, from 2013 to 2020, of the five OWTPs planned, only two would be produced, at a net cost to the City that was nearly double⁶² what had been originally projected to produce the five OWTPs.

⁶⁰ This negotiation with the Québec government also concerned the federal grant portion, because the City interacts only with the provincial government, which interacts with the federal government.

⁶¹ Following our audit, the SE brought to our attention evidence, obtained in February 2020, of a commitment made by the Québec government to pay the City a grant totaling \$101.6M for the construction and operation of the OWTPs of Saint-Laurent and Montréal-Est, an amount that corresponded to the total grant that Québec planned to provide for the entire project (\$68.5M) and to \$33.1M out of the \$67.1M that the federal government was planning to provide for the five OWTPs. The Québec government stated that it had asked the federal government to review this cut and award the full grant as well, but no decision in this matter had yet been obtained.

⁶² In 2013, the net cost of the project to the City for the construction and operation of five OWTPs was to be \$107.1M (\$237.4M – \$130.3M) according to the best-case scenario. In 2020, with the grants confirmed, the net cost to the City should climb to \$196.9M (\$298.5M – \$101.6M), but for only two OWTPs.

TABLE 8

Evaluation of the Net Cost of the Project from 2013 to 2020 Resulting from the Reduction of the Grants Expected

Date	Number of OWTPs	Total costs	Grants anticipated	Net costs supported by the City
2013	5, including the CPP	\$237.4M ^[a]	\$130.3M (provincial and federal)	\$107.1M
2019	2 • West OWTP (Saint-Laurent borough) • East OWTP – Montréal-Est	\$298.5M ^[b]	Three scenarios considered ^[c]	\$233.5M
				\$254.8M to \$251.5M
				\$298.5M
2020 ^[e]	2 • West OWTP (Saint-Laurent borough) • East OWTP – Montréal-Est	\$298.5M	Scenario retained	\$196.9M ^[d]
				\$162.9M

^[a] Including a provision of \$14.8M for the acquisition of land for the South and West OWTPs.

^[b] The total loan by-law requested by the SE is \$330.8M. The difference of \$32.3M is explained by the acquisition, decontamination and civil infrastructure work (sewers and access road) for the other three OWTPs, which were sent back to the planning phase.

^[c] In the presentation made to the EC for approval of project changes in January 2019, the SE invoked a variety of situations as possible ways of obtaining grants. The Bureau du vérificateur général (BVG) summarized these situations in three scenarios.

^[d] When our report was filed with the City, the federal government had not committed to paying the full grant amount, as initially anticipated. According to a message sent by the Québec government to the City, negotiations between the two levels of government were still under way.

^[e] Evidence obtained from the SE following our audit.

Source: SE, Presentation of the business plan to the EC for project phase transition points, January 2013.

SE, Presentation made to the EC for approval of project changes, January 2019.

The fact that the five OWTPs are integrated into a single project subject to the PTOMBC limited the City's ability to progress more quickly with work on some OWTPs. From May 2013 to April 2015, we noted that there was a slowdown in the work and the preparatory studies conducted to launch calls for tenders for OWTPs. It was during this period that Firm B had to produce the PFP and the PFT for the OWTPs before Firm D did an economic evaluation. As mentioned above, Firm D's mandate was cancelled; the reason given was that Firm B's work in producing the PFP alone had taken too long. We wonder whether, if separate mandates had been granted for the production of the PFP and the PFT of each OWTP, it would have been possible to accelerate the process and undertake cost estimates as the PFP and the PFT of each OWTP became ready. We also question the extent to which the site relocation of the North OWTP from Villeray–Saint-Michel–Parc-Extension borough to Rivière-des-Prairies–Pointe-aux-Trembles borough may have impacted the project as a whole and the production schedule for all OWTPs, not just the North OWTP. However, since the SE did not submit a change request to the EC when the site for this OWTP was changed, we did not obtain evidence that there was a comprehensive reassessment of the impact that this site change would have on the overall project timeline.

The PTOMBC's requirement for obtaining the grant is that, within five years following the establishment of the facilities, 70% of the residential occupancy units on the City's territory be served by an organic waste collection service for the purpose of recovering the waste. It is a matter of initially putting in place tools to collect the waste (brown bins) for a sufficient number of dwellings and then gaining access to facilities to treat the waste collected. In 2013 it was projected that the four OWTPs (excluding the CPP) would have an annual treatment capacity of 199,000 tonnes of organic waste, but the EC's decision in January 2019 to construct only two OWTPs gives the City a capacity of only 110,000 tonnes per year. In hindsight, considering that the Québec government awarded the full grant and that over the next few years, these two OWTPs will have a sufficient treatment capacity, in terms of the organic waste recovery rate, to serve at least 70% of the occupancy units, there is reason to question whether the OWTP project, as it was originally presented for coverage by the PTOMBC, was not overly ambitious. We question whether it would not have been more prudent, appropriate and effective for the City to start with a smaller project, produce it quickly and obtain a full grant, and subsequently adopt a second phase to increase the City's treatment capacity.

3.1.2.A. Recommendation

We recommend that the Service de l'environnement, before undertaking the three Organic Waste Treatment Plants projects that have not yet been approved, conduct a cost-benefit analysis and a financial risk analysis to determine whether it is more advantageous for the City to produce these future Organic Waste Treatment Plants in the form of three separate projects rather than a single comprehensive project, in order to minimize interactions associated with project development and management and thereby promote the establishment of each Organic Waste Treatment Plant as expeditiously as possible.

3.2. Mechanisms for Monitoring the Progress of Projects

In order to promote the success of a project, there must be rigorous monitoring, from project startup to project closeout. According to good project management practices in the public sector,⁶³ the performance of a project is measured by compliance with three objectives: costs, timelines and content, i.e., the satisfaction of needs and compliance with requirements. Any change in one of these objectives will have repercussions on the others. For this reason, it is important to document changes made to a project and undertake a continuous assessment of the various risks associated with it in order to make informed decisions in a timely manner.

According to the Governance Framework, a project sector office, separate from the unit to which the project manager reports, must be established, mainly to ensure monitoring of the project phase transition points, particularly in the areas of compliance with the Governance Framework, cost estimates, financial evaluation, tender appendices, deliverables, project evaluation criteria and information management. Such a sector office is also responsible for handling project management systems and procedures. However, the SE does not have such a project sector office, unlike the SGPI, which acts as a project executor and which does have one. According to the SE, it had not been considered necessary to have one in addition to the SGPI's. The SE also relied on monitoring tools placed at its disposal by the BPPI: the risk management matrix and the table of the stakeholders involved, two tools found in the basic DAP model developed by the BPPI. Despite the support of the BPPI, mainly through its tools, and the presence of a project sector office within the SGPI, our audit work enabled us to identify two components of project management and progress monitoring that were not developed throughout the project. These components are set forth in the next two subsections.

⁶³ "Gestion des risques dans les grands projets d'infrastructure publique – Guide méthodologique," Infrastructure Québec.

Monitoring Major Project Changes

According to good project management practices, it is essential to compile all changes made during a project life cycle in a register. Such change management is a key element of project risk management. It then becomes the project manager's responsibility either to assess the potential impacts of changes before approving them or to seek the necessary authorizations.

According to the guide d'élaboration du DAP designed by the BPPI, this DAP is scalable and must be presented to governance committees during project phase transition points (between initiation and planning and between planning and execution), but also when any other major change is made to the project. In March 2014, the BPPI presented to the EC the process for approving and coordinating large-scale projects. In this presentation, it reiterated this necessity for a requesting department, during the project execution phase, to present another, revised DAP to governance committees if the project had to undergo major changes with respect to the fulfilment conditions defined in the execution mandate. According to the SE, if a change has no impact on the timeline or less than a 10% impact on the costs of the project, it is not necessary to obtain a new execution mandate.

As previously stated, the SE initially obtained the execution mandate for the integrated OWTP project in early 2013.⁶⁴ Later, as shown in Table 4, the SE presented three revised DAP to governance committees for the purpose of obtaining new execution mandates as a result of major project changes in 2017, 2018 and 2019. Each time, the major change was associated with an increase in the estimated project costs that exceeded the 10% tolerance threshold.

Nevertheless, a major change was made to the project between the end of 2013 and an unspecified date in 2014,⁶⁵ when the North OWTP, for which the CESM was being considered as a site, was relocated to Rivière-des-Prairies-Pointe-aux-Trembles borough. According to the SE, this was a decision made to follow up on a promise made during the 2013 municipal election campaign. However, the CESM site had been the subject of a public consultation, a favourable recommendation by the Office de consultation publique de Montréal and the development of the PFP by Firm B in 2013.⁶⁶ Nevertheless, this site change necessitated a new public consultation in the fall of 2014 (the report was produced by the Office de consultation publique de Montréal in February 2015), in which the Office de consultation publique de Montréal stressed [TRANSLATION] *"the lack of transparent prior consultation with the community, which would have promoted the social acceptance [of the project] and would have enabled the three organic waste treatment facilities in the East sector [East OWTP (Montréal-Est), North OWTP (Rivière-des-Prairies-Pointe-aux-Trembles borough), CPP] to have a structuring effect on economic revitalization efforts in the sector."* An engineer in the SE also had to go back to the drawing board to adjust the PFP of the North OWTP (Rivière-des-Prairies-Pointe-aux-Trembles borough) based on the PFP of the West OWTP (Saint-Laurent borough), whose composting operation, like the North OWTP, was to be completely indoors, contrary to what should have

⁶⁴ Timeline – DAP1.

⁶⁵ We were not able to obtain a specific date from the SE for this event.

⁶⁶ Timeline – C9.

been done with the OWTP of CESM (where the composting takes place partly outdoors). Moreover, according to a document presented by the SE to the EC in April 2017 to obtain a new execution mandate because significant changes had been made to the project, an additional cost of \$12M was allocated to the site change for the North OWTP, which represented a 5.4% increase over the previous estimate for the project, which was made in 2012 and presented to the EC in early 2013. This change also led to a change in the scope of the project, since the management mode of the North OWTP was switched from DC+MO to DCMO. According to the rule that the SE must follow, which is to submit a new Demande d'approbation de projet only if the economic difference is greater than 10% (we did not track down the City's official directive justifying this way of operating), it was justified in not making such a presentation to governance committees before 2017. The fact remains, however, that the SE considers this change in sites to have caused a two-year delay in the project as a whole. It bears repeating that, with the exception of the South OWTP (LaSalle borough), OWTPs are developed simultaneously and according to the same timeline. Prior to this site change, the last official timeline had been presented to the EC in January 2013, with an operation start date for all OWTPs toward the end of 2016 (except for the South OWTP, which was to start operations in 2021). However, with respect to the decision made in about 2014 to make a site change involving a new public consultation for which a report was expected in early 2015, we think that it was impossible to meet such a timeline, in which calls for tenders were planned for 2013–2014—exactly the time when the decision to change the site was made. At the SE's April 2017 presentation to the EC, the commissioning date was then postponed to 2020 (2024 for the South OWTP). Considering that the City was originally to commission all OWTPs except the South OWTP (LaSalle borough) by the end of 2019 to obtain grants from the Québec and federal governments, the foreseen impact on the project timeline and the resultant risk of losing the grant should have been sufficiently important as to be presented to governance committees as early as 2014. This would have made it possible to provide an official record of the consequences, risks and issues associated with the site change and thereby ensure transparent management of the project. Furthermore, no change register is kept by the SE to manage this project. Such a register would have enabled this department to reconcile, in writing, this decision to move the site of the North OWTP (Rivière-des-Prairies–Pointe-aux-Trembles borough) and to document the date, the nature and justification of any changes, large or small, and the analysis done to determine the impact of authorizing or not authorizing the change.

Risk Management

In the guide d'élaboration du DAP, a section on project risks, opportunities, assumptions and constraints states that it is necessary to list only the main risks and opportunities, namely the major ones, in a DAP. However, in order to be able to list these major risks, rigorous work of identifying and prioritizing risks is required beforehand. Good risk management practices for major public projects⁶⁷ involve, in addition to identification of risks that might have an impact on the project at any time in its life cycle:

- qualitatively analyzing the risks (significance of risks with respect to achieving the project objectives);
- quantifying the impacts of risks on achieving the objectives;
- planning risk responses by developing strategies to take advantage of opportunities and limit threats by reducing the probability of risk materialization, the magnitude of their impact, or both;
- monitoring and controlling risks by continuously updating the risk register.

This concept of continuous risk monitoring is also addressed in the guide d'élaboration du Dossier d'approbation de projet (DAP)⁶⁸, which states that a risk assessment must *[TRANSLATION]* "be carried out according to an iterative process throughout the duration of the project and according to methods used specifically in risk analysis, [and] all risks must be accompanied by an assessment of their importance and a description of how they will be monitored."

With respect to the SE, we obtained the risk registers for the five OWTPs that had been developed in 2012 for the purpose of producing the business plan. These risk registers are essentially in keeping with good practices, identifying, for each risk, the probability of its occurrence, its importance and consequentially the value of the inherent risk, then the mitigation measures to be established and, lastly, the value of the residual risk. We also obtained the risk register developed by the SGPI for the infrastructure component of the project.

⁶⁷ "Gestion des risques dans les grands projets d'infrastructure publique – Guide méthodologique," Infrastructure Québec.

⁶⁸ This guide was developed by the BPPI in 2012. Although amendments were made to it up to 2015, the section on risk management was not amended after 2012.

Risk registers were developed, but only six of the fourteen risks appearing in these registers were entered in the initial business plan prepared in 2012 for the first presentation made to the EC in 2013; the risks were not necessarily assessed as being the most critical, and no qualitative or quantitative information was disclosed in this document. At that time, the risks involved:

- not obtaining the federal grant;
- lack of social acceptability;
- low public participation in the selective collection of organic waste;
- a low volume of organic waste from the industrial, commercial and institutional sectors;
- inadequate distribution of collection services among boroughs and related municipalities;
- not obtaining certification and a selling price for the compost.

The mitigation measures adopted to minimize either the occurrence of these risks or their impacts are either very general or have not yet been applied by the SE, which means that these risks are not controlled. For instance, concerning the risk of not obtaining a federal grant, the SE states that steps were taken to approach the government. To control the risk of a low volume of organic waste from the industrial, commercial and institutional sectors, the SE states that agreements should be concluded with public and parapublic institutions before construction work is started on OWTPs. There had therefore been no guarantee, when this business plan was produced, that these risks would actually be controlled.

From 2013 to 2017, no new presentation was made to a governance committee and we did not obtain evidence that these risk registers were updated during this period. It was not until a new presentation was made to the EC in April 2017 for the purpose of obtaining a new execution mandate that the risks were updated. This time, the SE presented four risks, only one of which may have been similar to the risks encountered in 2013: the risk that the quantity of organic waste to be treated would increase. Two new risks associated with Phase 2 concern solely its deadline or the failure to carry it out. A fourth risk is simply named [TRANSLATION] “*Design, construction and maintenance risk,*” with no details given about the actual nature of these risks. Furthermore, the mitigation measure for the risk associated with the increase in the quantity of waste to be treated, i.e., the two-phase implementation of the facilities, in turn becomes a risk: the risk of not carrying out Phase 2. Furthermore, the document does not show that the mitigation measure that is presented for this risk will control it. The simple entry of [TRANSLATION] “*Expropriation of land in LaSalle for Phase 2*” appears as a risk mitigation measure. These four risks are presented, along with mitigation measures, without any qualification or quantification of the probability of the occurrence and impacts of the risks. Nevertheless, three months before this presentation was made to the EC, the SGPI had produced and sent to the SE a risk management register containing eight risks. However, of the three greatest inherent risks in terms of criticality, only one is presented to the EC by the SE.

We also noted the lack of risk monitoring. For example, in 2013, the SE discussed the risk of the lack of social acceptance of the project. In 2017, the SGPI's risk register also identified this risk as an inherent risk with one of the highest criticality levels and the second-highest residual risk (risk that takes mitigation measures into account). However, the SE's presentation to the EC does not address this risk. The risk of not obtaining certification of compost quality, addressed in 2013, is no longer mentioned in 2017. If no risk register is kept by the SE, it is impossible to identify the reasons explaining why this risk is no longer mentioned. Such a register would have made it possible to determine whether this was because the risk no longer exists or because other, more critical risks now existed.

In October 2018, when the SE made another presentation to the EC to obtain a new execution mandate because major changes were made to the project, only three risks were presented. We obtained no evidence that SGPI had updated the risk register and sent it to the SE. No risk associated with the construction of OWTPs is presented. Furthermore, the risks presented by the SE are no longer risks, but facts, findings. One such example was about *[TRANSLATION] "exceeding the deadline of the current normative framework of the PTOMBC grant for Phase 1."* However, when this presentation was given, the Québec government had made an agreement with the municipalities to postpone to 2022 the commissioning date for composting or biogas production plants. The SE, for its part, wanted to obtain an execution mandate from the EC for commissioning the West (Saint-Laurent borough) and East (Montréal-Est) OWTPs in 2021, while postponing commissioning the North OWTP (Rivière-des-Prairies-Pointe-aux-Trembles borough) and the Montréal-Est pilot project to 2024, which is after the deadline anticipated by Québec. It therefore became almost certain that the 2022 deadline would be missed, and for this reason, the SE should have obtained guarantees from the Québec government that the grant would be maintained.

Finally, no risk was presented to the EC at the last presentation for a new execution mandate that we examined, in January 2019.

Based on these findings, we consider the concept of risk management to be poorly understood by the SE and the SGPI. In fact, from 2012 to 2019, the SE presented very few risks to governance committees, even though this was a construction project that had never yet been undertaken in the City and was to be implemented on several sites at a cost of several hundred million dollars using technologies not well known in Québec, with important deadlines that had to be met in order for grants to be maintained. Furthermore, since the SE and the SGPI do not update these registers regularly, it is not possible to demonstrate, as required by good project management practices, that continuous risk management is being performed for this project.

3.2.A. Recommendation

We recommend that the Service de l'environnement acquire tools to keep track of project changes and document the reasons for them and their impacts, whether these changes are minor or major, in order to comply with the process for approving and coordinating large-scale projects and with good project management practices.

3.2.B. Recommendation

We recommend that the Service de l'environnement and the Service de la gestion et de la planification immobilière update the risk register associated with the project on an ongoing basis and inform the governance committees of any major change to the project, in order to comply with the Guide d'élaboration du Dossier d'approbation de projet.

3.3. Accountability

Accountability for the integrated OWTP project takes different forms: internal accountability reporting within the SE, reporting by the SGPI, as the executor, to the SE, as the requesting department, by the SE to the BPPI, and by the SE to governance committees as part of the process for approving large-scale projects subject to the Governance Framework. In the first two cases, we obtained evidence of this accountability reporting. We also obtained evidence that the SE transfers information on project progress on a quarterly basis, in accordance with BPPI requirements. In this section, we focus on accountability to governance committees as part of the project approval process.

Accountability Reporting of the Service de l'Environnement to Governance Committees

As mentioned above, the SE presented the project to the EC in January 2013 in order to obtain an execution mandate.⁶⁹ Presentations were subsequently made in 2017, 2018 and 2019⁷⁰ to obtain new execution mandates because major changes had been made to the project. This is, in a sense, accountability reporting from the SE to the EC. Although the promoter of a large-scale project must submit quarterly reports to the BPPI on compliance with the project timeline, the total budget and scope of the project using a colour code, the BPPI tracking table does not show any accountability reporting of this type by the SE for the quarters from November 2015 to the end of the period covered by our audit, even though the OWTP project appears in this table.

⁶⁹ Timeline – DAP1.

⁷⁰ Timelines – DAP2, DAP3 and DAP4, respectively.

Since the final presentation was the one authorizing the granting of contracts for the construction of the East (Montréal-Est) and West (Saint-Laurent borough) OWTPs, we focused on examining the quality and completeness of the information provided to the EC.

In this last presentation of 2019, the SE explains the differences between the price submitted by the lowest compliant bidder and the City's evaluation as being due to *[TRANSLATION] "current conditions (2018) in the construction market, [which are] different from those at the time of the estimate (2016)." However, according to the data that we obtained from the SE and the SGPI, the SGPI prepared one cost estimate for the project in 2016 and a second one in 2018 (just after the bid opening; see section 3.1.1.). As shown in Table 9, the estimates presented by the SE to the EC in January 2019 agree with the estimate made by the SGPI in 2018 rather than with the 2016 estimate. However, one of the changes made in the 2018 estimate compared to the 2016 estimate was based on the very fact that, in 2018, the market was 3% more overheated than it was at the time of the 2016 estimate. It therefore seems that, in 2019, the SE presented to elected officials the price submitted and the City's 2018 estimate but relied on the 2016 estimate to explain the difference between the price of the lowest bidder and the estimate.*

The SE also states that additional equipment *[TRANSLATION] "is justified by strict odour management requirements that force the bidder to integrate risk mitigation measures."* It is important to remember that bidders must comply with the requirements appearing in tender documents published by the City. The impact of these requirements, including risk mitigation measures, should have been taken into consideration when the SGPI estimated the cost of the project, because the Ministry's new requirements have been known since 2017, while the estimates were revised in 2018.

TABLE 9

Lowest Bid Price Submitted and Evaluation of Project Costs by the SGPI (in Millions of Dollars, Including Net Taxes)

Phase of project	West OWTP – Saint-Laurent borough				East OWTP – Montréal-Est			
	Price submitted ^[a]	Project cost evaluation by the BVG			Price submitted ^[a]	Project cost evaluation by the BVG		
		Presented to the EC in January 2019 ^[a]	Data as of May 2018 ^[b]	Data as of December 2016 ^[b]		Presented to the EC in January 2019 ^[a]	Data as of June 2018 ^[b]	Data as of December 2016 ^[b]
Design	132,7	78,2	80,5	65,4	121,5	73,4	73,9	68,9
Construction								
Maintenance	25,6	26,8	24,3	24,3	31,1	40,1	40,1	40,1
Operation								
Total	158,3	105,0	104,8	89,7	152,6	113,5	114,0	109,0

^[a] Values presented to the EC at the time of the presentation for approval of project changes.

^[b] Cost compilation carried out by the City's BVG based on documents obtained from the SE and the SGPI.

In its January 2019 presentation to the EC, the SE stated that the market [TRANSLATION] “consists of a small number of qualified, recognized players” to account for part of the difference between the City’s estimate and the bids received. According to the decision-making summary⁷¹ for granting the contract to design, construct, operate and maintain the East OWTP (Montréal-Est), of the 55 parties who obtained the tender documents, the City estimated that only five out of eleven operators had the expertise to bid (the other contractors were a government organization, other municipalities, equipment manufacturers, general contractors with no operating expertise and firms of professionals). In the end, the City received only one compliant offer for this call for tenders. While it is true that the market for this type of project seems limited, it is nonetheless noteworthy that in 2012, Firm C had concluded in its market survey that [TRANSLATION] “the five projects planned by the City [had] a certain market attractiveness.” The firm concluded its report by recommending that the City [TRANSLATION] “confirm the conclusions obtained from the survey [by conducting] interviews or a more in-depth paper survey” because “several respondents [had] expressed reservations about some aspects” of the City’s project and that, “depending on what the City decides, it is possible that some aspects of the project might reduce market attractiveness.” The SE did not follow up on Firm C’s 2012 recommendation. We feel that it is therefore difficult to justify later that there was only a small number of players in the market.

⁷¹ Decision-making summary 1190749001.

Finally, in its January 2019 presentation to the EC, the SE also explained that the difference in costs between the City's estimate and the bids received for the West (Saint-Laurent borough) and East (Montréal-Est) OWTPs was due to *[TRANSLATION]* "variations in the exchange rate that were not taken into account due to the volatility observed and the difficulty of anticipating technology suppliers' manufacturing locations." At that time, the SE was talking about a variation in the exchange rate of 20% for the Euro against the Canadian dollar and 24% for the US dollar against the Canadian dollar. However, a clarification about this significant variation in the exchange rate is made on page 55 of the 16th appendix to the document that was presented to the EC. This variation was not calculated since the last estimate of project costs was prepared by the SGPI (May and June 2018) but between 2010 and 2018. Since these last estimates were prepared at the same time as the bids were received, or even a few days afterwards, it is not appropriate to cite a variation in the exchange rate to justify part of the difference.

Based on these different findings associated with the explanation that the SE provided to the EC in January 2019 to justify the difference in costs for the West (Saint-Laurent borough) and East (Montréal-Est) OWTPs between the City's estimate and the lowest bid obtained, we think that the SE has not provided accurate, comprehensive information for accountability reporting purposes.

Presentation of Options to the Executive Committee

At the last presentation made by the SE to the EC to obtain a new execution mandate as a result of major project changes (January 2019⁷²), three options were presented to elected officials:

- Option 1: Cancel and relaunch the calls for tenders;
- Option 2: Cancel the calls for tenders and launch calls for tenders for waste treatment and recovery without using any infrastructure belonging to the City;
- Option 3: Grant contracts associated with facilities for treating the waste collected and cancel the contract for the North OWTP (Rivière-des-Prairies-Pointe-aux-Trembles borough).

In this presentation, the SE recommended Option 3 to the EC. We note that Options 1 and 2 are not quantified and are therefore not sufficiently evaluated. For example, it was mentioned that Option 1 involved a *[TRANSLATION]* "risk of increasing costs (inflation, exchange rate, etc.)" with no quantification of this increase. The SE stated that this option could make it necessary to reduce the technical requirements for the project but did not specify what would be possible and how this could open up the market. The presentation for Option 2 mentioned that there was *[TRANSLATION]* "little treatment capacity currently available or being developed" in the Greater Montréal region. Other than a map shown at the beginning of the presentation indicating where the current quantities were to go, no information was provided to elected officials to support this argument of limited treatment capacity. The SE also states that there was a *[TRANSLATION]* "lack of quality control of outputs

⁷² Timeline – DAP4

on the part of the City” and a “lack of control over environmental impacts.” No additional information was provided to elected officials to support these assertions. No advantage is cited for either Option 1 or 2, but for Option 3, which the SE recommends, the advantages are presented. The option is said to [TRANSLATION] “necessitate the use of private contracts to manage the missing capacity and the contractual securing of these capacities” without, however, specifying what these quantities to be managed externally amount to. Options 1 and 2 cite various risks, but Option 3 does not mention any risks. Yet there is a risk that the City will not obtain a grant from the Québec government as a result of the delays incurred. But instead of referring to any risk, the SE states in its presentation that there is a need to [TRANSLATION] “request negotiations with the MELCC [Ministère de l’Environnement et de la Lutte contre les changements climatiques] to maximize the grant amount and change the production schedule.” The presentation made to elected officials makes no mention of a federal government grant. Nevertheless, at the time of our audit, the SE told us that the federal government is considering the overall project grant for the five OWTPs, and that the postponement, or even failure, to produce three of the five OWTPs could result in the loss of the entire amount of this grant.

We did not obtain evidence from the SE that Options 1 and 2 were analyzed in greater depth than what was presented to elected officials. Yet this was an important decision for the EC to make. We would have expected a comprehensive equivalent analysis to be done for all three options. This therefore does not constitute accountability reporting enabling elected officials to make an informed decision.

3.3.A. Recommendation

We recommend that the Service de l’environnement establish mechanisms to ensure the completeness and accuracy of all information presented by the multidisciplinary teams concerned to governance committees, so that they can make informed decisions with full knowledge of the facts.

3.3.B. Recommendation

We recommend that the Service de l’environnement put in place, for future Organic Waste Treatment Plants for which the production contract has not yet been awarded, mechanisms for presenting options in the areas of risks, costs and timelines to governance committees on a comparable basis, so that these committees can make informed decisions.

4. Conclusion

In response to the *Plan directeur de gestion des matières résiduelles de l'agglomération de Montréal 2010–2014* (PDGMR), the Service de l'environnement (SE) of the Ville de Montréal (the City), obtained authorization from the City's executive committee (EC) in early 2013 to undertake the work requested to go to tender to select contractors and operators for four Organic Waste Treatment Plants (OWTPs) and one Centre pilote de prétraitement (CPP). This Master Plan was a response to Plan métropolitain de gestion des matières résiduelles de la Communauté métropolitaine de Montréal, which aimed to achieve regional autonomy in residual waste management. Prior to this authorization by the EC, the SE had been conducting a variety of exploratory studies since at least 2006 to identify the best options, other than landfill, to manage organic waste. In 2008, the first evaluation of the production of four OWTPs anticipated that a \$115 million (\$M) investment would be necessary and put forth the possibility of making at least three plants operational over the next five years.

Ten years later, in 2018, the required investment surged to \$589M and no OWTP was under construction yet. The preliminary studies were more complex, and a decision was made to relocate one OWTP, leading to new studies and one additional public consultation. In 2019, the City's EC authorized the awarding of two contracts to execute the construction of the West (Saint-Laurent borough) and East (Montréal-Est) OWTPs in Design–Construction–Maintenance–Operation mode for \$298.5M (excluding decontamination costs). The decision also involved replanning the production of the two other OWTPs and the CPP on undetermined future dates.

In light of the overall finding that cost overruns were incurred only to obtain fewer facilities than initially planned in the end (two OWTPs instead of five), considering the risk of not obtaining the full federal government grant (\$33.1M instead of \$67.1M) because of the change that was made to the original project, and considering that the Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux (the "Governance Framework") was not followed completely, and that the monitoring and the different accountability reporting are incomplete, we conclude that the process followed to carry out the OWTP construction project was not sufficiently rigorous and that the monitoring normally expected in a project of such complexity and scope was inadequate. It is against this background that we recommend that the City:

- ensure that the Governance Framework is followed and applied adequately by all departments involved in the project;
- assess the appropriateness of dividing the production of future OWTPs into separate projects in order to prevent any delay or deferment in the development of technical specifications or in the design and construction of an OWTP from impacting the production of other OWTPs and obtaining the grant;
- ensure that all project changes are documented and that major changes are presented to governance committees for the purpose of obtaining the necessary authorizations to continue the project;

- ensure ongoing monitoring of the potential project risks and the mitigation measures to be established in accordance with best practices in order to reduce the probability of their occurrence or their seriousness in the event that a risk materializes;
- ensure rigorous accountability reporting to governance committees, in particular, justifying differences between prices submitted and the City's estimates on the basis of the assumptions retained to prepare the last estimates in a comprehensive, accurate manner;
- analyze the different options, taking into account the advantages and disadvantages of each, for the purpose of making a recommendation to governance committees, including the EC.

While we were not able to identify all the reasons for the increased costs of producing these OWTPs or the delays relative to the timelines required to obtain the full provincial and federal grants, we think that more rigorous monitoring of best project management practices could have prevented, or at the very least made it possible to proactively manage, many of the elements that forced the SE to make project changes and obtain new authorizations from the EC to continue the projects.

5. Appendices

5.1. Objective and Evaluation Criteria

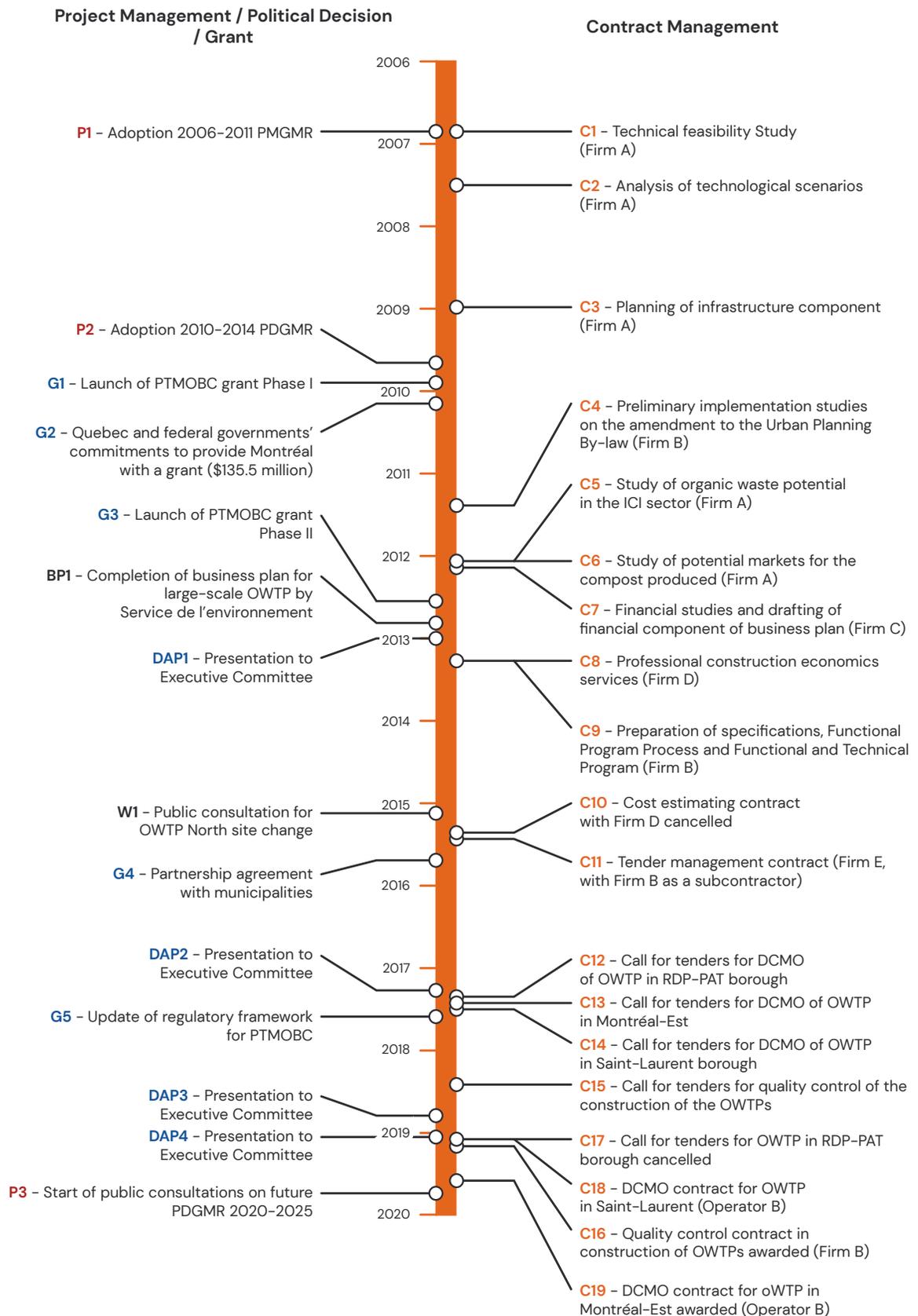
Objective

Ensure that the management of Organic Waste Treatment Plants construction projects is carried out as part of a rigorous process and is adequately monitored.

Evaluation Criteria

- Construction project planning is carried out in accordance with best practices.
- The roles and responsibilities of the stakeholders involved are clearly defined and adequately assumed.
- Mechanisms for monitoring the progress of projects in terms of costs, timelines and deliverables have been put in place and function adequately.
- Accountability reporting on the progress of projects is carried out regularly and in a timely manner.

5.2. Project Timeline



5.3. Table Summarizing the Different Contracts Awarded to Firms and Contractors from 2006 to 2019

Mandate	Year	Firm					Operator	
		A	B	C	D	E	A	B
Technological feasibility study	2006	X						
Analysis of technological scenarios	2007	X						
Infrastructure component planning	2008	X						
Preliminary implementation studies for the amendment of the Urban Planning By-law	2011		X					
Study of the organic waste potential in the ICI sector	2012	X						
Study of potential markets for the compost produced	2012	X						
Financial studies and drafting of the financial component of the business plan	2012			X				
Preparation of specifications, Programme fonctionnel du procédé (PFP) and Programme fonctionnel et technique (PFT) ^[a]	2013		X					
Professional construction economics services (cancelled in 2015) ^[b]	2013				X			
Tender management contract ^[c]	2015		X ^[d]			X		
DCMO management contract for the OWTP in Saint-Laurent borough	2019							X

Mandate	Year	Firm					Operator	
		A	B	C	D	E	A	B
Quality control contract for the construction of the OWTPs	2019		X					
DCMO management contract for the OWTP in Montréal-Est	2019							X

- [a] Firm B was unable to produce the PFT within the time limit granted. The entire budget for the contract was used to produce the PFP.
- [b] Firm E had to use the PFT produced by Firm B to establish the project costs. Since Firm B did not have enough time to produce the PFT, Firm E's mandate was cancelled with monetary compensation for Firm E, which had already started working.
- [c] Part of this contract consisted in producing the PFT that Firm B had not had the time to produce.
- [d] Firm B was a subcontractor of Firm E.





3.3.

Follow-up of Requirements for the Management of Large- scale Projects and Programs

March 29, 2021

2020 ANNUAL REPORT

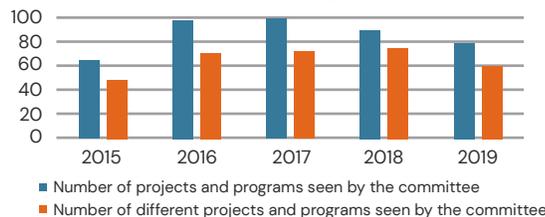
Auditor General of the Ville de Montréal

Follow-up of Requirements for the Management of Large-scale Projects and Programs

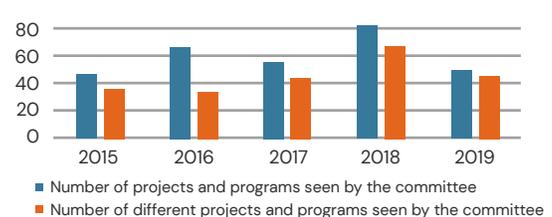
Background

In 2010, the City created a Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux (hereinafter the "Cadre de gouvernance")¹ to guide the management of large-scale projects (hereinafter the "Projects") and programs (hereinafter the "Programs")² that, annually, require tens, if not hundreds, of millions of dollars in investment to be completed. The Cadre de gouvernance defines the identification criteria and establishes a process for approval by governance committees to authorize the transition of the project to the next phase of its life cycle. In 2014, to support the decision-making process, a "Dossier d'approbation de projet (DAP)" was implemented to better present all the information required for decision-making. The Bureau des projets et programmes d'immobilisations (BPPI) is mainly responsible for making this Cadre de gouvernance known and ensuring that the business units responsible for the completion of the Projects and Programs comply with it.

Number of files (projects and programs) seen by the Comité corporatif de gestion des projets et programmes d'envergure (CCGPE)



Number of files (projects and programs) seen by the Comité de coordination des projets et programmes d'envergure (CCPE)



Purpose of the Audit

The purpose of our audit was to ensure that the City's Projects and Programs follow the Cadre de gouvernance and requirements for obtaining the various authorizations from the governance committees to move forward through their life cycle.

Results

Since implementation of the Cadre de gouvernance, the identification criteria for Projects and Programs have evolved and are disseminated on the BPPI Intranet. However, these do not match those in the Cadre de gouvernance, and nothing specifies which prevail. As well, the criteria in place do not allow for identification of some Programs until they have reached the completion phase. Since they were not identified in a timely manner, these Programs did not appear before the governance committees from the start of their life cycle. Although the project management approach appears to be structured, the BPPI does not seek to assure itself of this entirely. As well, it does not exercise any systematic control over the comprehensiveness of the documents produced by the business units before they are presented to the governance committees. Finally, reporting on the monitoring of Projects and Programs is not done on a regular basis to the governance committees, nor any progress report on Projects (content, budgets and timelines) based on the initial parameters.

¹ The Cadre de gouvernance was updated in 2020, following the period covered by the audit and was not the subject of this mandate.

² Based on the criteria established in the 2010 Cadre de gouvernance, the Projects include major urban development projects, municipal asset management projects that represent an estimated value of \$10M or more in investments or that are complex or high-risk, as well as any other project identified by the administration. For their part, municipal asset management programs cover the areas of water, roads, living environments, buildings, computer services, including telecommunications, and public safety.

Main Findings

Identification of new Projects and Programs

- The BPPI publishes criteria for identifying Projects and Programs on its Intranet site that differ from those in the Cadre de gouvernance but does not formalize them or specify which ones are in effect.
- The annual identification process for new Projects and Programs does not allow for the identification of all new Programs at the start of their life cycle or ensure that they go before the governance committees.

Follow-up of Requirements in the Cadre de gouvernance and Administrative Framework for the Dossiers d'approbation de projet

- The BPPI does not seek to ensure that all Projects and Programs comply with all the requirements of its Cadre de gouvernance and administrative framework for the DAP, in particular that all of the documents are produced for the various points of transit.
- The BPPI does not systematically monitor the comprehensiveness of the documents produced by the business units before they are presented to the governance committees.

Guides, Tools and Training

- The information presented in the municipal commitments section of the DAP, i.e., sustainable development, active design and mobility, social accessibility and the smart City concept, vary from one Project to another because of a lack of precise markers of what is expected of the persons responsible in the fields of expertise.

Accountability

- The lack of precise instructions on how to fill in the quarterly tracking table has resulted in a lack of uniformity in the information presented on Projects and Programs.
- The information presented in the reports does not allow for the progress status of the Projects to be evaluated (content, budgets and timelines) based on the initial parameters.
- The information obtained during the reporting is not presented regularly to the governance committees for the purposes of discussing possible issues related to the various Projects and Programs.
- Annual follow-up on the progress of Programs at the governance committees is not done by all business units.

In addition to these results, we have formulated various recommendations to the business units that are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms

AMP	Approbation des modifications de projet
BPPI	Bureau des projets et programmes d'immobilisations
CCGPE	Comité corporatif de gestion des projets et programmes d'envergure
CCPE	Comité de coordination des projets et programmes d'envergure
DAP	Dossier d'approbation de projet
EC	executive committee
TCWP	Three-year capital works program



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1. Background

Each year, the Ville de Montréal (hereinafter the “City”) manages a number of Projects and Programs whose complexity, risks and investments vary significantly. Some examples are the redevelopment of Rue St-Hubert (\$50M), the renovation, expansion and construction program of libraries³ (\$550M), and the replacement program of the secondary water and sewer system (\$2.1B over 10 years).

Given the extent of the investments, since April 2010, the City has had a Cadre de gouvernance des projets et des programmes de gestion d’actifs municipaux (the “Cadre de gouvernance”) to ensure that the Projects and Programs are completed using industry best management practices. This Cadre de gouvernance applies to the entire City (departments, boroughs, non-profit organizations and paramunicipal agencies).

According to the Cadre de gouvernance, large-scale projects (hereinafter the “Projects”) are defined either as major urban development Projects, municipal asset management Projects with an estimated value for the City of \$10M or more in investments, complex or high-risk Projects, or any other Project identified by the administration. Large-scale programs (hereinafter the “Programs”) are not defined by the Cadre de gouvernance using any specific criteria.

The Cadre de gouvernance establishes a process for approval by the governance committees at the various transition points of the life cycle of a Project or Program, along with the operating rules, which are as follows:

- 1. Preparing a business file at the transition points:** The business units responsible must prepare or update a business file for the presentations that they will have to make to the governance committees during the transition points.
- 2. Cost estimates:** The business units must make a preliminary cost-benefit estimate of the Project or Program.
- 3. Financial aspects:** All Projects and Programs must be supported by three-year capital programs⁴ and operating budgets. The Service des finances is responsible for overseeing the financial process of each Project and Program.

³ One Program makes it possible to complete several Projects.

⁴ In 2021, the City replaced its *Three-year capital works program* (TCWP) with a *Ten-year capital works program*.

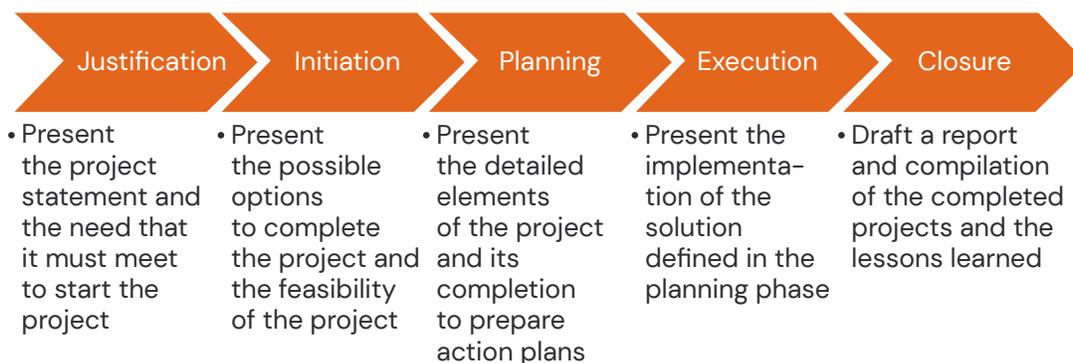
4. **Consultation, public affairs and communication aspects:** The project or program manager must promote a climate of social acceptability and ensure the Projects and Programs reflect the City’s brand image and overall communication strategy.
5. **Procurement strategies and rules:** The guiding principle is to ensure that the City obtains the best conditions and best quality-price ratio.
6. **Contract fulfillment and management:** Strict management of internal mandates, external contracts and various changes during the work is maintained for each completion phase of Projects and Programs.
7. **Management system audits:** The internal auditor conducts a selective biennial audit on the project management systems, methods and procedures.

Projects and Programs are completed in five phases, as shown in Figure 1, and between each of these phases, there is an appearance before the following governance committees (see Appendix 5.3.):

- The Comité corporatif de gestion des projets et programmes d’envergure (CCGPE), whose primary role is to recommend to the Comité de coordination des projets et programmes d’envergure (CCPE) the transition of Projects and Programs to the next phase;
- The CCPE, whose primary roles are to authorize the transition to the start-up and planning phases and to recommend to the executive committee (EC) their transition to the execution phase;
- The role of the EC is to authorize the transition of the Projects and Programs to the execution phase.

FIGURE 1

Completion Phases of a Project or Program at the City



Source: Figure produced by the BVGM based on information collected from the BPPI.

The Cadre de gouvernance falls under the Direction générale, which is responsible for its development, implementation, tracking and updating. The Direction générale has tasked the Bureau des projets et programmes d'immobilisations (BPPI) with the mission⁵ to oversee the implementation, application and dissemination of the Cadre de gouvernance. In that capacity, the BPPI ensures implementation of a project management culture at the City and the use of project management best practices.

The BPPI's responsibilities consist of registering the Projects and Programs for a passage point before the governance committees, forwarding the supporting documentation to them, sitting on the governance committees and drafting the minutes of these meetings. It also develops and provides reference tools (guides, templates) and training to the business units to guide them along the journey of their project with the City's various governance committees.

On a quarterly basis, it also consolidates in the tracking table of priority Projects and Programs the indicators received from the Project and Program managers on achieving the objectives in terms of the budget parameters, timeline and scope of the Project. A summary table containing changes to the various parameters is then sent to the governance committees for information and discussion. The fact remains, however, that the selection, management and completion of the Projects and Programs do not fall under the BPPI but rather under the business units described as applicants in the Cadre de gouvernance.

Until 2014, application of the Cadre de gouvernance was directed towards Projects and did not take Programs into consideration. Since the end of 2014, however, the City has made the completion of the Projects and Programs listed in the Three-year capital works program (TCWP) a priority and integrated recurring asset management programs into the follow-up process by the governance committees. Because more Projects and Programs were having to be tracked, the criteria for identifying them were reviewed to avoid overburdening the governance committees. Thus, the budget criterion for a Project or Program was increased from \$10M to \$50M.

Since that time, the criteria defining Projects and Programs have evolved over the years (see Table 1).

 ⁵ Intranet BPPI, May 2020.

TABLE 1

Evolution of the Identification Criteria

<p>2010 Cadre de gouvernance</p>	<p>Projects include:</p> <ul style="list-style-type: none"> • Major urban development projects; • Municipal asset management projects: <ul style="list-style-type: none"> – with an estimated value of \$10M or more in investments; – complex; – high-risk; • All other projects identified by the administration. <p>Programs in the areas of:</p> <ul style="list-style-type: none"> • water; • roads; • living environments; • buildings; • computer services, including telecommunications; • public safety.
<p>BPPI – Presentation of the approval and coordination process for projects and programs before the governance committees (Comité de direction interservices des projets et programmes (CDIPP) October 2016)</p>	<ul style="list-style-type: none"> • Priority projects of the municipal administration; • With a global budget of \$50M or more; • A transition point in the current year; • An investment of \$10M or more in a completion year; • Followed up in previous years.

**BPPI –
Presentation
of new projects
and programs
to be followed up
in 2020 (CCGPE
in November 2019)**

- Projects and Programs with an end date and a global budget of \$50M or more;
- Recurring Programs with a projected \$50M or more in the next 10 years;
- Projects and Programs with expenditures of \$10M or more in one TCWP year of completion;
- Projects and Programs followed up in previous years to their closure;
- All Projects and Programs specifically identified by elected officials and the administration.

**Intranet of
the Ville de
Montréal, Projets
et Programmes
d’immobilisations
section⁶**

Projects and Programs:

- with a global budget of \$50M or more;
- complex and high-risk;
- involving many stakeholders;
- specifically identified by elected officials and the administration;
- projects that include an architecture or design competition.

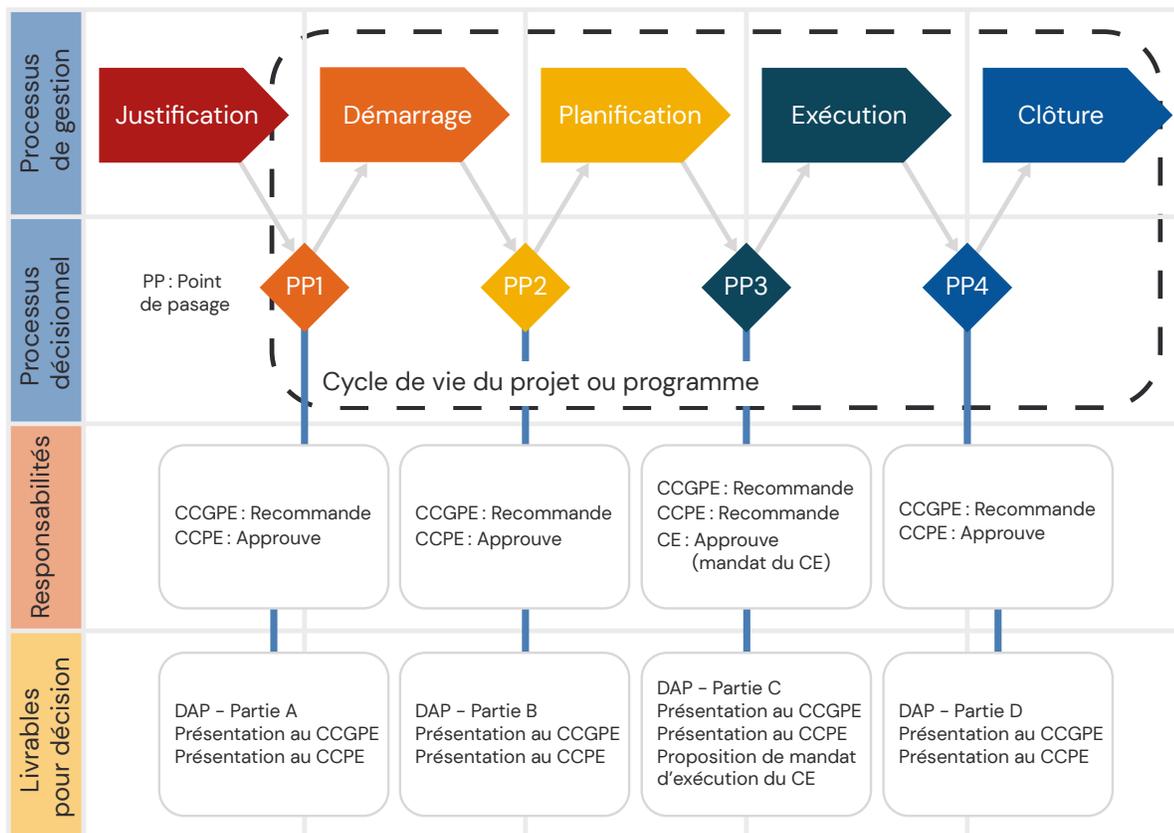
In April 2015, to ensure that all the information required for decision-making was brought forward during the appearance (see Figure 2) of the Projects and Programs before the governance committees (transition points), the Direction générale, under an administrative framework,⁷ replaced the project charter with the “Dossier d’approbation de projet (DAP),” which structures and brings together all the main aspects of a Project or Program.

⁶ In effect May 2020.

⁷ Administrative framework C-OG-DG-P-15-001.

FIGURE 2

Decision-Making Process Based on the Phases of the Life Cycle of a Large-Scale Project or Program



Source: BPPI (2015).

Appearing before a governance committee is required in the following situations:

- To obtain a transition point from one phase to another, by presenting a DAP/Program;
- To obtain approval for changes involving the content, timeline or budget, through a request for the Approbation des modifications de projet (AMP);
- At the request of the Direction générale, for the presentation of a status report for a Project or Program or to obtain a decision, authorization or direction from decision makers.

As of October 31, 2019, the BPPI was following 269 Projects and Programs (including subprojects and programs) (see Table 2). Of this number, almost half (48%) were in the execution phase, and 52% of these had an investment budget greater than \$50M. However, these percentages cannot be determined for all the Projects and Programs in the preliminary phases of completion, since the budgets have not yet been defined for these.

TABLE 2

**Projects and Programs at October 31, 2019
(Including Subprojects and Programs)**

Business units	Total
Bureau des projets et programmes d'immobilisations	3
Commission des services électriques	1
Concertation des arrondissements	2
Direction générale	1
Diversité et inclusion sociale	1
Service de la culture	28
Service de l'eau	34
Service de l'environnement	15
Espace pour la vie	5
Service de la gestion et planification immobilière	33
Service des grands parcs, du Mont-Royal et des sports	30
Service de l'habitation	1
Service des infrastructures du réseau routier	13
Service du matériel roulant et des ateliers	1
Service de l'urbanisme et de la mobilité	86
Société du parc Jean-Drapeau	5
Service des technologies de l'information	10
Total	269

Given the number of Projects and Programs in effect and the extent of the investments required to complete them and given that the City has a dedicated team to ensure that the project management process is followed for their completion, we consider that there is reason to look at the operations of the BPPI and how it ensures that the Cadre de gouvernance is applied and followed.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act* (CTA), we completed a performance audit mission on the “Follow-up of requirements for the management of large-scale Projects and Programs”. We performed this mission in accordance with the *Canadian Standard on Assurance Engagement* (CSAE) 3001, described in the *CPA Canada Handbook – Certification*.

The purpose of this audit was to ensure that the City’s Projects and Programs comply with the *Cadre de gouvernance des projets et des programmes de gestion d’actifs municipaux* and the requirements to obtain various authorizations from the governance committees to move forward through their life cycle.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control* (CSQC) 1 from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit work focused on the period from April 20, 2015, to March 2, 2020, but for some aspects, earlier and later data were also taken into consideration. It was mainly completed between March 2020 and January 2021.⁸ We also took into consideration information that was sent to us up to March 2021.

This audit was conducted primarily within the BPPI, a unit tasked by the Direction Générale, which reports to the Direction générale adjointe aux services institutionnels.

Upon completing our audit, we submitted a draft audit report to the manager of the audited business unit and to the Direction générale for discussion purposes. The final report was then sent to obtain an action plan and timeline for implementing the recommendations concerning them, as well as to the Acting deputy director general at the Services institutionnels.

⁸ During our audit, but after the period covered by our work, the *Cadre de gouvernance* was updated and adopted by the executive committee, then city council and, finally, the urban agglomeration council in October 2020. No audit was performed on the updated Framework. For the purposes of this report, the findings regarding the requirements contained in the 2010 Framework (whose basic principles are taken up again in the updated Framework) and the recommendations take into consideration the impact of the changes made to the Framework.

3. Audit Results

3.1. Mechanism for Identifying new Large-Scale Projects and Programs

3.1.1. Definition of the Criteria for Identifying Large-Scale Projects and Programs

For a Project to be subject to the requirements of the Cadre de gouvernance, it must, at a minimum, meet one of the criteria defined in the Framework, whereas a Program must be in a specific field as mentioned in Table 1. Upon consulting the BPPI Intranet site during our audit, however, we noticed that the identification criteria did not entirely match those presented in the Cadre de gouvernance. This can lead to confusion among the business units depending on whether they rely on the Cadre de gouvernance or on the Intranet site.

We therefore wanted to know what the official identification criteria were to ensure that all Projects and Programs were identified. In addition to the criteria defined in the Cadre de gouvernance and those found on the Intranet site, we found other information sources that reported identification criteria that differed slightly (see Table 1). In November 2019, the BPPI, in a presentation to the CCGPE during an annual inventory of Projects and Programs conducted by the BPPI, further clarified the criteria compared with what appeared on the Intranet. Asked why there were different criteria, the BPPI explained that, while municipal programs are part of the Cadre de gouvernance, they had not really been seen by the governance committees prior to 2014, the year in which the change of administration prioritized carrying out Projects in the TCWP, which included recurring asset management Programs that represented a major portion of the TCWP. As a result, the list of Projects and Programs increased, and the criteria were reviewed to avoid overwhelming the governance committees. According to the BPPI, the identification criteria have been reviewed approximately once a year since that time, and are always formalized on the BPPI's Intranet site, which renders obsolete the criteria appearing in the 2010 Cadre de gouvernance in effect at the time of our audit. As part of its annual identification of new Projects and Programs to be followed up, the BPPI uses much more precise criteria than the official ones presented on the Intranet site (see Table 1). Our audit also showed that these official criteria are not subject to approval by elected officials when they are changed, although the Cadre de gouvernance was adopted by the executive committee, city council and the urban agglomeration council. In addition, at no time on the BPPI's Intranet site or in the Cadre de gouvernance that was still in effect on the same site during our audit was mention made that the criteria appearing in this document were no longer in effect and that one had to refer to those on the Intranet site.

Consequently, depending on the criteria consulted, it can be difficult for one of the City's business units to know whether the Projects and Programs that they are responsible for are subject to the requirements of the Cadre de gouvernance or not.

3.1.1.A. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations ensure that all changes to the identification criteria for large-scale Projects and Programs are adopted by the municipal authorities and officially communicated to avoid any risk of confusion by the business units and to ensure that the requirements of the Cadre de gouvernance are followed for all large-scale Projects and Programs that are subject to them.

3.1.2. Identifying new Large-Scale Projects and Programs

According to the BPPI, the City's business units are responsible for identifying new Projects or Programs and registering them to appear before the governance committees (transition points). The BPPI is responsible for monitoring the application of the Cadre de gouvernance. To this end, it conducts an annual inventory of all new Projects and Programs to ensure that they are presented before the City's governance committees. The inventory consists of discussions with the business units and elected officials via the Comité de direction interservices des Projets et Programmes (CDIPP⁹) and the CCPE, and the review of the TCWP.

When a new Project or Program is identified by the BPPI, it is added to its tracking table. We set out to verify whether the inventory conducted at the end of 2019 contained all the new Projects and Programs. Based on our audit, we found that, in general, the BPPI adequately identified the Projects and Programs, although the process is not documented. We noticed, however, that some Programs—with end dates or recurring—were identified as being large-scale and should have followed the Cadre de gouvernance since they meet the budgetary criteria defined in Table 1, but in fact these Programs were not new and were even in the execution phase. Asked about this, the BPPI explained that, for a given year, a Program can have a budget below \$50M and thus not be considered large-scale and not be seen by the governance committees. But the following year, if its budget exceeds \$50M, it then becomes a large-scale Program without having had to pass the transition point preceding the execution phase. In our opinion and that of the BPPI, the issue is to identify Programs as soon as possible before they are entered in the TCWP to ensure that the various committees can monitor their progress in compliance with the requirements of the Cadre de gouvernance.

While a process for the BPPI to identify new Projects and Programs exists, it fails to capture all the Programs in a timely manner so that they appear before the governance committees based on their life cycle.

3.1.2.A. Recommendation

We recommend that the Direction générale require the business units to ensure that all programs likely to meet the scale criteria follow the decision-making process before any funding is authorized.

⁹ This committee promotes the best possible integration of municipal expertise in the completion of inter-departmental projects and programs and optimizes the completion of the TCWP. However, this is not a decision-making committee on the progress of a project or program.

3.2. Follow-up of the Requirements of the Cadre de gouvernance and the Administrative Framework for the Dossiers d'approbation de projet

Implementation of the Cadre de gouvernance and the administrative framework is based mainly on approval of Projects and Programs by the governance committees at the transition points in the phases of the life cycle and on the DAP tool. While the new framework no longer mentions operating rules, there is reason to question applying the 2010 Cadre de gouvernance regulations and maintaining them in a potentially improved framework to ensure the sound management of the City's large-scale Projects and Programs.

The approval process rests on the creation of a DAP, which presents relevant information for informed decision-making by the CCPE or EC, depending on the specific phase of the life cycle (see Figure 2).

In addition to a DAP, the business units responsible for a Project or Program must also comply with the requirements to:

- Produce cost-benefit estimates of the Project or Program with the help of other business units, if necessary, and have the estimates reviewed independently by the area office¹⁰ involved;
- Support their Project or Program with operating budgets or three-year capital expenditures plans and comply with the financial process under the direction of the Service des finances;
- Ensure that their Project or Program fosters a social acceptability climate and reflects the City's brand image and communication strategy;
- Comply with the procurement strategies and rules, ensuring that the City obtains the best conditions and best quality-price ratio;
- Ensure strict management of contracts throughout the Project and Program completion phases.

In addition, the Cadre de gouvernance provided for a selective biennial audit of the project management systems, methods and procedures conducted by the internal auditor.

¹⁰ This is a project management office within a business unit that is responsible for designing, harmonizing, disseminating and supporting the project and program management systems and procedure. It should be noted that not all the City's business units have an area office.

Based on the approval process, for a Project or Program to be seen by a governance committee, the project manager must:

- Enter the Project through the BPPI on the targeted committee's agenda on the desired date (CCGPE/CCPE);
- Send the presentation documents to the BPPI five working days prior to the committee meeting so that the BPPI can forward them to the committee members to familiarize themselves with them;
- Present the Project or Program to the committee on the agreed date and receive comments and recommendations from the committee.

To appear before the EC, the BPPI asks that the file be entered on the agenda of an EC session. As with the appearance before the CCGPE or CCPE, five working days before the date of the EC session, the project manager must send the PowerPoint presentation to the BPPI, along with the Mandat d'exécution to be obtained from the EC. The BPPI validates the compliance¹¹ of the mandate proposal and transmits it to the Division du soutien aux instances within the required timeline. The day of the meeting, the project manager presents the Project or Program in closed session to obtain a Mandat d'exécution.

As part of our audit, we sought assurance that the Projects and Programs complied with these requirements of the Cadre de gouvernance and DAP framework. More specifically, we wanted to verify that the Project and Program managers had produced all the documents required at the transition points between the various phases and obtained the required authorizations from the governance committees, and that the operating rules had been applied.

We selected¹² 29 Projects and Programs appearing on the tracking table of priority Projects and Programs of October 21, 2019, and for each one, we consulted the documentation presented at the various appearances before the governance committees (in particular, the Dossiers d'approbation de projet (DAP) /presentations and AMP requests), as well as the minutes of these meetings.

¹¹ Compliance is limited to validating that the information on the scope, budget and timeline contained in the Proposition du mandat d'exécution reflects the discussions and recommendations of the CCGPE and CCPE.

¹² Appendix 5.2. presents the composition of our sample chosen on a discretionary basis in terms of the number of Projects/Programs according to the five phases of the life cycle. The sample size is adequate to obtain sufficient evidence to support our conclusions.

Upon examination of the files of the Projects and Programs in our sample, we observed that:

- In 28% of Projects and Programs (eight files), the decision-making process before the governance committees was not entirely followed:
 - In four files, authorizations to transition to the execution phase or approvals for changes to the projects currently being executed were granted by the CCPE rather than the EC;
 - In four files, there was no appearance before the EC after changes were made to the scope, budgets or timelines of the Project or Program.
- In 45% of Projects and Programs (13 files), some DAP or AMP documents required during the transition points were not produced or all the documentation of the Project or Program was missing. For example:
 - The project manager produced only the PPT presentations and not the DAPs (more complete Word document). The BPPI told us that to avoid delaying the project, this situation was tolerated if the presentation complied with the template in effect;
 - Changes to the budget and timeline were made to Projects and Programs without an AMP request being produced;
 - The DAPs and PPT presentations were not produced, or the BPPI had no trace of them even though it must receive them before presentation to the governance committee;
 - In addition, almost 60% of the missing files concerned recurring programs for the maintenance of assets. As mentioned previously, it is possible that these Programs became “large-scale” once their annual budget exceeded the BPPI’s budget criterion, in which case they automatically fell into the execution phase and earlier approvals did not take place. These situations were not specified in the decision-making process of governance.

- In 31% (nine files), validation by the BPPI of the information presented by the applicant at the committees was insufficient. For example:
 - Changes to the presentations requested by the committees were not made in subsequent presentations or had to be requested again at the next committee meeting;
 - The BPPI took action during presentations to the governance committees, asking that additions and specifications be made to the information produced so that it complied with the required practices, including revising the budget based on the amounts in the TCWP, or pointing out that the templates used were not those in effect at the time of the presentation, elements that could have been monitored by the BPPI before the presentation;
 - Members of the CCPGE have asked to make changes to the risk analysis presented within the framework of a Project or to present all the scenarios studied;
 - Upon reading the DAP, we also found that, occasionally:
 - › Either the section on risks and mitigation plans was not documented, or the level of detail was not adapted to the scale of the Project/Program or the description did not correspond to the definition of a risk;
 - › The level of detail of the information presented in the specialized sections containing the municipal commitments varied with the Projects/Programs.

Nevertheless, although the findings listed above did not compromise approvals at various transition points, we believe that the time allocated for receipt of documents to be presented to the various committees could be an issue, limiting the time the BPPI devotes to validating the information presented and changes to it, as needed.

Given the frequency (bi-monthly) and limited duration of the meetings of the governance committees, we believe that presenting complete and accurate information would optimize the time spent on the various files and could result in the governance committees seeing a greater number of files yearly. As mentioned further on in our report, the governance committees lack the time to see all the Projects and Programs each year.

Regarding applying other requirements of the Cadre de gouvernance that are instead completed via project management by the business units, our discussions with the BPPI and consultation of the documents we received enabled us to conclude that the BPPI does not seek to obtain evidence that these requirements are applied, in particular that the financial process under the purview of the Service des finances is followed.

In addition, during our audit, we did not obtain any evidence that the internal audits of the project management systems were conducted in compliance with one of the operating regulations contained in the Cadre de gouvernance adopted in 2010.

Based on these findings, while the BPPI's approach to project management seems structured, the BPPI does not seek to ensure that the requirements of the Cadre de gouvernance and the administrative framework for Projects and Programs are fully fulfilled. As well, the BPPI does not systematically monitor the comprehensiveness of the documents produced by the business units prior to their presentation to the governance committees.

The above findings highlight several shortcomings in controlling the implementation of the operating regulations in the Cadre de gouvernance. While the new Cadre de gouvernance no longer explicitly refers to such rules, we consider that these are standard management rules, and that completion of the City's large-scale Projects and Programs should refer to them.

3.2.A. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations establish a mechanism to ensure that the Cadre de gouvernance is implemented by the business units based on sound management rules.

3.2.B. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations verify that the documents provided by the business units are complete prior to their presentation to the governance committees, to control compliance with the requirements of the decision-making process for managing Projects and Programs.

3.2.C. Recommendation

We recommend that the Direction générale implement an internal control mechanism to periodically evaluate the efficacy of the Cadre de gouvernance to ensure that it achieves its objectives.

3.3. Guides, Tools and Training

Guides and Tools

As part of our audit, we set out to evaluate whether the documents produced by the BPPI and made available to the Project and Program managers were sufficient, up-to-date and easily accessible, to enable them to perform their duties and present files that comply with the Cadre de gouvernance and administrative framework.

We note that the BPPI has a set of guides and tools to steer and support Project and Program management through the various appearances before the City's governance committees (transition points).

In particular, the BPPI has created a set of distinct templates (DAP/AMP/PPT presentation) to support each of the transition points of a Project or Program, making it possible to structure the information required for decision-making by the governance committees. Explanations are provided directly within most of the templates to facilitate drafting the information.

Supporting these templates are comprehensive methodology guides designed to equip the Project or Program managers with tools on topics specific to project management, including risk management and cost estimates and preparing capital expenditure Project and Program budgets.

However, in reading the Dossiers d'approbation de projet (DAP) at the planning and execution phases as part of our analysis of the 29 Projects and Programs in our sample, we found that the level of detail of the information presented in the sections that made up "the municipal commitments" (i.e., sustainable development, active design and mobility, social accessibility, and the smart City concept) varied from one Project or Program to another. To meet DAP requirements regarding these municipal commitments, the BPPI recommends that project managers call on administrative units with specialized expertise in these fields. This represents a major difference in the BPPI's support of project managers for whom it produced guides regarding risk management and the Project or Program budget.

Without precise markers of what is expected from these areas of expertise, it is normal to find discrepancies in the information presented. In addition, it can be burdensome, in terms of coaching and support, for the persons in charge of the various fields of expertise to be called upon regularly for the same type of information.

Training

In addition to the guides and tools put at the disposal of the project managers, we found that the BPPI regularly holds training sessions for all City employees. According to the information obtained, the BPPI held 27 training sessions in 2019 and early 2020, which were attended by almost 275 employees. Based on our audit, we concluded that the training given was specific and practical, and focused mainly on introducing the Cadre de gouvernance, the approval process including the DAP, and the methodology guides. These are also supported by detailed training material that participants can refer to in the future.

3.3.A. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations have the specialized business units produce guides detailing expectations related to the information required for elements concerning municipal commitments and make them available to the business units so that the latter can adequately document the Dossiers d'approbation de projet related to these elements.

3.4. Accountability

3.4.1. Compilation of the Information in the Tracking Table

The BPPI is responsible for consolidating Project and Program reporting. On a quarterly basis, it asks the business units to update a tracking table based on specific parameters, depending on whether it is a Project or a Program. For each parameter, one value and one colour code (green, yellow or red) must be assigned based on whether there is no risk, a possible risk or certainty that the scope, budget or timeline of the Project or Program will not be met. The business units may also add a general comment about a Project or Program in the designated column for clarification.

For the 29 Projects and Programs in our sample, we wanted to know whether the business units properly identified changes in these indicators during the reporting. While the business units generally indicated by colour code when they expected that there would be a delay in the timeline to complete a Project or Program, we observed that they were less thorough in identifying a risk to the budget. In the case of two Projects, changes to the budget values were not indicated with a different colour code. For example, for one Project, the budget went from \$21.96M to \$23.75M (\$1.79M), and for the other, it went from \$183M to \$218M (\$35M) in a three-month period without any change made to the risk status of the budget between the two reports.

In other situations, the return to a green indicator was done too quickly. For example:

- In the case of one Project in the execution phase, the budget was in yellow at \$93M on May 27, 2016, and rose to \$173M on September 9, 2016, but returned to green. Between the two reporting dates, the Project appeared before the CCPE (June 14, 2016), which recommended its continuation without an AMP being authorized by the EC. Since there was no official authorization for this change, it should have remained yellow.
- In the case of another Project, the red indicator for the budget on November 24, 2017, became green on February 15, 2018, although the budget increase was only approved by the EC a year later, on February 7, 2019.

The BPPI stated that it does not correct the colour code that the business units put in their reports since it considers that it is their responsibility to provide the appropriate information. Nevertheless, the BPPI can ask a business unit for clarification regarding the comments that appear in the reporting document or on the values entered in this document. The BPPI also confirmed that it cannot validate the amounts entered in the budget in the reporting document versus what is in the TCWP since it is only for three years and there is no trace of amounts authorized in the past. Also, some TCWPs might be associated with several Investi numbers (TCWP project numbers).

While the BPPI does not change the colour codes, there is a cell for each parameter in the tracking table that it can highlight (in orange) to indicate that it does not agree with the evaluation made by the business unit. Since the BPPI does not perform any checks, there is no guarantee that the information transmitted to the CCGPE and the CCPE is accurate and up to date.

The BPPI adopted a high-level approach to reporting with the business units that favours a few global indicators for a Project or Program. However, this reporting method does not make it possible to quickly know the trend line of a Project or Program in relation to evolving expenses without consulting other information sources. Indeed, the BPPI does not ask for the expenses incurred to date but only for the total planned budget and the Project or Program manager's degree of confidence that this total budget will be respected. The CCGPE and the CCPE cannot know whether a Project has sufficiently progressed in relation to the real expenses incurred to date without additional research.

3.4.1.A. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations develop a guide specifying the markers for the business units to follow to standardize quarterly reporting.

3.4.1.B. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations review the reporting required of the business units to include the progress status of large-scale projects (content, budgets and timelines) based on the initial parameters, to provide a more comprehensive view of a business unit's ability to deliver the large-scale project within the authorized markers or to identify the issues proactively.

3.4.2. Reporting to the Governance Committees

Once the tracking table is updated, the BPPI prepares a summary table containing only those Projects and Programs for which it considers that a change has been made in one of the parameters since the last report. This must be done five days before the CCGPE meeting and tabled on the committee's site.

We found during our audit that, in the schedules of the CCGPE meetings for 2015 and 2016, mention is made at regular intervals of an information item, "Tracking table of priority Projects and Programs." Starting in 2017, this item no longer appears on the agenda. We found evidence that this item was discussed at the CCGPE meetings of April 14, 2015, and July 7, 2015. However, the minutes of the CCGPE meeting of October 13, 2015, do not mention it in spite of it being on the agenda; this is also the case for the November 26, 2015, meeting. In the minutes of the CCGPE meeting of September 16, 2016, although the item was to have been presented, the minutes state that "this topic was not dealt with due to a lack of time." The same reason is given at the meeting of December 6, 2016, which was the next time this item was on the agenda. During the next meeting, on December 16, 2016, the item was not raised again. Similar scenarios were observed in 2017, 2018 and 2019. Other than in 2015 and 2016, we did not find any evidence that such presentations were made to the CCGPE. The follow-up document was simply tabled on the committee's site.

According to the BPPI, the idea raised that the CCGPE did not have time to discuss the follow-up of Projects and Programs in the wake of a report can be explained by the number of Projects and Programs this committee tracks during a limited number of meetings per year (two per month) (see Table 3). Although from 2015 to 2016, the number of Projects seen by the CCGPE rose from 53 to 72, it stayed at 72 in 2017, dropping to 67 in 2018, and finally to only 47 in 2019. It is worth noting, however, that if a Project needed to come more than once before the CCGPE in the same year, it only counted as one Project seen by the committee.

TABLE 3**Number of Projects and Programs Examined by the Governance Committees**

Year	CCGPE		CCPE	
	Projects	Programs	Projects	Programs
2015	53	12	36	11
2016	72	26	26	40
2017	72	28	47	9
2018	67	22	64	17
2019	47	32	30	19

The BPPI also states that the departments must present the progress of all the Programs for which they are responsible once a year. Based on the schedules of CCGPE and CCPE meetings and information items (and not transition points), we observed a reduction in the number of presentations over the years, except for 2016 (see Table 4).

TABLE 4**Presentation to the Committees by a Business Unit of the Programs under its Responsibility**

Business unit	2015		2016		2017		2018		2019	
	CCGPE	CCPE								
Service des infrastructures, de la voirie et des transports ¹³	X	X	X	X	X	X	X	X		
Service des grands parcs, du Mont-Royal et des sports	X	X	X	X	X		X		X	
Service de l'eau			X	X	X		X			
Service de la gestion et planification immobilière			X	X	X					

¹³ The SIVT – Service des infrastructures, de la voirie et des transports underwent an organizational change in 2018, and its activities are divided between the Service des infrastructures du réseau routier and the Service de l'urbanisme et de la mobilité, but neither of these departments has reported on the progress of their Programs since then.

While stating that it asks the business units to report on the progress of the Programs annually, the BPPI does not systematically put the follow-up of these Programs on its agenda. We can conclude, therefore, that the BPPI has not required that the departments present the yearly progress of all their Programs. The sheer number of Projects and Programs to be followed up by the governance committees makes it impossible for the BPPI to formally present a follow-up of Projects and Programs once the business units have reported on them. The fact that the CCGPE can follow up a Project more than once a year takes up space in the completion schedule, further limiting the ability of the BPPI to present the follow-up of the Projects to the CCGPE and possibly to the CCPE. In addition, the elected officials and members of senior management do not have access to a specific question period to inquire about the progress of Projects and Programs. We therefore deem it necessary for the BPPI to review the method of reporting (type and frequency) to the governance committees.

3.4.2.A. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations periodically present to the Comité corporatif de gestion des projets et programmes d'envergure and the Comité de coordination des projets et programmes d'envergure the information obtained during the business units' reporting to keep elected officials and members of senior management informed about possible issues with the various large-scale Projects and Programs.

3.4.2.B. Recommendation

We recommend that the Bureau des projets et programmes d'immobilisations put on the meeting agenda of the Comité corporatif de gestion des projets et programmes d'envergure and of the Comité de coordination des projets et programmes d'envergure a regular presentation for each business unit responsible for large-scale programs so that senior management has a comprehensive picture of the progress of these large-scale programs.

4. Conclusion

In 2010, the Ville de Montréal (the City) approved a Cadre de gouvernance to regulate the management of Projects and Programs, which requires, on an annual basis, tens, or even hundreds of millions of dollars of investment for their completion. The Bureau des projets et programmes d'immobilisations (BPPI) is tasked by the Direction générale with making the Cadre de gouvernance known, updating it and ensuring that the business units responsible for completing the Projects and Programs follow this Cadre de gouvernance.

Our audit led us to conclude that, despite the existence of this Cadre de gouvernance and the BPPI's responsibility to ensure that it is followed by the business units, the Projects and Programs do not all comply with it. While the BPPI develops the identification criteria for the Projects and Programs, their communication on the BPPI's Intranet site does not match what is in the Cadre de gouvernance. We also observed that, although there is a process to identify new Projects and Programs, it does not allow the BPPI to capture all the Programs in a timely manner so that they appear before the governance committees. As well, while the role of the BPPI is to ensure the business units comply with the Cadre de gouvernance and the Project approval process, it does not monitor the documents submitted by the requesting business units prior to presentation to one of the governance committees. This results in committee members requesting changes to or clarification of information that should have been in a Dossier d'approbation de projet (DAP), as required by the Cadre de gouvernance or the administrative framework for a DAP.

Because of the number of current Projects and Programs, governance committees do not have time to view all of them every year. The need to have Projects and Programs reappear before a governance committee because they lack precision or do not comply with a requirement of the Cadre de gouvernance or administrative framework for a DAP is therefore far from optimal and limits the number of files the governance committees can review annually.

The BPPI has developed guides and training to help business units meet the requirements of the Cadre de gouvernance. Based on our observations, there is a need to prepare a similar guide for all the analyses that must be done by the business units as part of the DAP, especially regarding the social acceptability of the Project, sustainable development and the component related to the smart city. This would help standardize the nature and level of detail included in the documentation provided by the business units.

Finally, our audit led us to conclude that the reporting process required of the business units needs to be better defined so that the BPPI can have an overall view of the progress of the Projects and Programs, including actual expenses incurred and not only whether the total budget is expected to be insufficient. Considering that governance committees are decision-making bodies for the approval of Projects and Programs, we believe that a regular and full reporting should be made by the BPPI on the progress of all the Projects and Programs.

Based on these findings and to ensure the sound management of the public funds needed to complete the City's Projects and Programs, we recommend that the City:

- Ensure that all changes to the identification criteria for large-scale Projects and Programs are adopted by the municipal authorities and officially communicated to the business units;
- Require the business units to ensure that all programs likely to meet the scale criteria follow the decision-making process prior to any funding authorization;
- Establish a mechanism that ensures that the Cadre de gouvernance is implemented by the business units based on sound management rules;
- Verify that the documents provided by the business units are complete prior to their presentation to the governance committees to control compliance with the requirements of the decision-making process for managing Projects and Programs;
- Implement an internal control mechanism to periodically evaluate the efficacy of the Cadre de gouvernance to ensure that it achieves its objectives;
- Put on the meeting agenda of the Comité corporatif de gestion des projets et programmes d'envergure (CCGPE) and the Comité de coordination des projets et programmes d'envergure (CCPE) a regular presentation on the progress of the Programs under the responsibility of the various business units;
- Periodically present to the CCGPE and the CCPE the information obtained during the reporting;
- Review the reporting required of the business units to include the progress status of large-scale projects (content, budgets and timelines) based on the initial parameters;
- Develop a guide specifying the markers for the business units to follow to standardize the quarterly reporting;
- Have the specialized business units produce guides detailing expectations related to information required for elements concerning municipal commitments and make them available to the business units.

5. Appendices

5.1. Objective and Evaluation Criteria

Objective

To ensure that the City's Projects and Programs comply with the Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux and the requirements to obtain the various authorizations from the governance committees to move forward through their life cycle.

Evaluation Criteria

- Mechanisms are in place so that the BPPI can identify any new Project or Program and follow up on it.
- Control mechanisms are in place so that Projects comply with the requirements of the Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux to obtain authorizations from the governance committees.
- The BPPI has tools to guide the business units in implementing and complying with the Cadre de gouvernance for large-scale Projects and Programs.
- Business units report to the BPPI on the follow-up of the Project and Program management requirements to enable the BPPI to monitor the progress of the Projects

5.2. Number of Large-Scale Projects and Programs in the Sample used in this Audit

Life cycle phase	Justification	Initiation	Planning	Execution	Closure
Projects	1	4	2	10	1
Programs with an end date	1	1	1	3	
Recurring programs	1		1	3	
Total	3	5	4	16	1

5.3. Composition of Governance Committees

Comité corporatif de gestion des projets et programmes d'envergure (CCGPE)	Comité de coordination des projets et programmes d'envergure (CCPE)	Executive committee (EC)
<ul style="list-style-type: none"> • Director general • Deputy directors-general (4) • Finance director • Director of the Bureau des projets et programmes d'immobilisations 	<ul style="list-style-type: none"> • Elected officials (8) • Director general • Deputy director-general of the Services Institutionnels • Director of the Bureau des projets et programmes d'immobilisations 	<ul style="list-style-type: none"> • Elected officials (12) • Mayor of Montréal





3.4.

Management of Lead Service Line Replacements

March 22, 2021

2020 ANNUAL REPORT

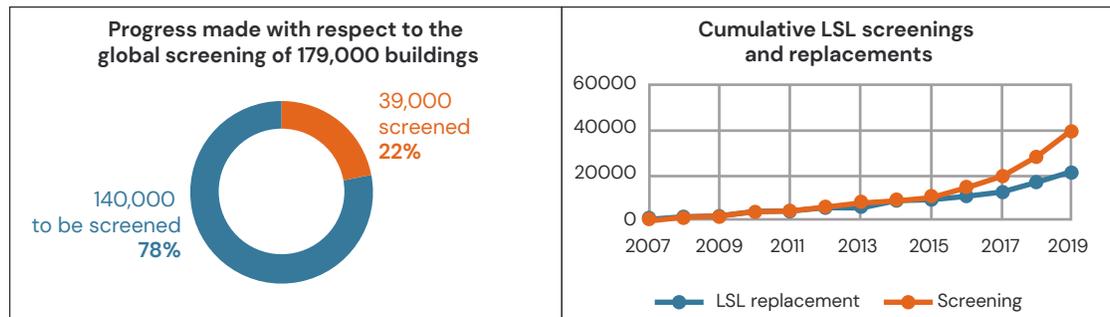
Auditor General of the Ville de Montréal

Management of Lead Service Line Replacements

Background

In 2007, in order to meet the government's drinking water quality and public health requirements regarding lead in drinking water, the Ville de Montréal (the City) filed a plan to replace all lead service lines (LSLs), which called for the elimination of all LSLs (estimated in number at 69,000) by 2026. In 2019, in response to Health Canada's change in the standard for the allowable concentration of lead in drinking water, and at the request of the Québec government, the City tabled a revised Action Plan (AP) to eliminate all LSLs by 2030. This revised plan provides for new actions, including accelerated screening. Lead is a metal known to have harmful effects on human health.

It is estimated that, as of December 31, 2019, approximately 21,000 of the 69,000 LSLs had been replaced. Between 2007 and January 2020, close to 39,000 buildings were tested. The 2019 AP calls for the screening of another 100,000 buildings. However, this number has increased considerably since the revised AP was approved, to reach somewhere around 140,000 buildings. In addition, there are approximately 21,000 buildings for which the public section of the LSL has been replaced and that need to undergo an analysis to determine whether there are any LSLs in the private section.



Purpose of the Audit

The purpose of our audit was to ensure that the implementation of the lead service line replacement (LSLR) activities is progressing in accordance with the 2007 AP that was revised in 2019 and that the municipal by laws regarding replacement work are being enforced as intended.

Results

While the initial AP was approved in 2007 by the Québec government, we note that the information available on the progress of the elimination of LSLs does not provide us with an overall picture of the situation that could be used to make informed decisions and to properly inform the public. Thus, we note that the replacement of LSLs has not progressed as planned in the AP. In addition, we did not find evidence that the regulations respecting the elimination of LSLs were systematically applied as required. In order to fully implement the AP, considerable work remains to be done and, as a result, the City must review existing management practices to accelerate the pace of LSL screening and replacement activities.

Main Findings

Roles and Responsibilities

- The roles and responsibilities of the various stakeholders involved in LSL screening and replacement operations have not all been clearly defined, communicated and implemented.

Implementation of the Action Plan

- The 2019 revised AP has not been updated to incorporate all relevant sectors of activity and new data to ensure that all LSLs are eliminated and that the health risks to the population exposed to LSLs are controlled.
- Not all of the activities provided for in the AP were accompanied by more specific timelines, targets and indicators, and not all of them were subject to periodic performance evaluations as part of the implementation of the AP, in order to make the required adjustments, if necessary.

Follow-up of the Implementation

- The monitoring mechanisms in place are not sufficient, causing problems in the collection, compilation and validation of data, particularly concerning LSLR operations. This poses a risk regarding the reliability and exhaustiveness of the data.

Monitoring of the Application of the Regulations

- The monitoring mechanisms in place do not provide the assurance that the adopted regulations and guidelines have been applied.

Means Used to Communicate with Citizens

- The interactive map and website do not provide information to citizens about the replacement of LSLs or about the progress of AP activities overall.

Accountability

- There is no reporting system to periodically and formally inform the elected officials and the managers concerned about progress with respect to the implementation of the AP.

In addition to these results, we have made various recommendations to the business units, which are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms

AP	Action Plan
CC	city council
CDN-NDG	Côte-des-Neiges– Notre-Dame-de-Grâce borough
DRSP	Direction régionale de santé publique
L	litre
LSLR	lead service line replacement
LSLs	lead service lines
m	metre
MDDEP	Ministère du Développement durable, de l'Environnement et des Parcs
MELCC	Ministère de l'Environnement et de la Lutte contre les changements climatiques
MHM	Mercier–Hochelaga–Maisonnette borough
µg/L	micrograms per litre
PRR	<i>Programme de réfection routière</i>
SE	Service de l'eau
SF	Service des finances



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1. Background

It is recognized that lead service line pipes are usually the most significant source of lead in drinking water. Since lead was considered an acceptable material in the manufacturing of pipes that supplied water to homes until 1975, there is a risk that lead will gradually be released into the water, thus exposing those who consume the water containing this contaminant.

The drinking water distributed by the municipal water system on the territory of the Ville de Montréal (the City) is of excellent quality. However, some buildings are supplied by a lead water line. The lead can dissolve and end up in the water, especially after long periods of stagnation. In this situation, there is a risk that the concentration of lead in the tap water will exceed the regulatory threshold.

The service lines are connected to the secondary water system. They are mainly located under the streets, connected to the secondary pipes and made up of a public section (for which the City is responsible) and a private section (for which the owner is responsible). This is the underground pipe that connects a building's system to the water system network. Appendix 5.2. of this report provides an illustration of these two sections connected to the secondary system pipe.

Service lines can be more than 95% lead-based (referred to as a lead service line [LSL¹]), significantly exposing building occupants to a source of lead. Moreover, according to the Ministère de la Santé du Québec,² the issue of lead in the water on the Montréal territory is mainly associated with the presence of LSLs, which makes this situation a public health issue. Lead is a metal known to have harmful effects on human health. It can have a variety of health consequences, including:

- damaging multiple organ systems in various ways;
- affecting the health of infants and children under six years of age by hindering their intellectual development;
- affecting the fetus of pregnant women;
- affecting cardiovascular health and causing renal dysfunction in adults.

¹ A service line has a public section, which the Ville de Montréal is responsible for maintaining or replacing, and a private section, which is the responsibility of the building's owner.

² Gouvernement du Québec, Ministère de la Santé et des Services sociaux, Direction régionale de santé publique de Montréal.

Lead was banned in 1980, eliminating its use in LSLs and making way for other materials, such as copper, for piping. Although efforts have been made to reduce lead exposure in recent decades, there are still a number of LSLs left on the City's territory. According to the Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC), it is possible that LSLs were installed as late as 1967 in the Montréal area. On the Montréal territory, the buildings with the highest probability of being supplied by an LSL are:

- buildings with 8 dwellings or fewer built before 1970;
- buildings constructed between 1940 and 1950, commonly referred to as "wartime housing".

According to the City's estimates, there are LSLs present in 16 of the 19 boroughs. In the boroughs of L'Île-Bizard–Sainte-Geneviève, Pierrefonds–Roxboro and Saint-Léonard, it is very unlikely to find LSLs, as the buildings in these boroughs were built more recently.

In 2004, after conducting its first lead sampling program, the City found that 69% of post-war homes had lead concentrations in their drinking water that exceeded the federal and provincial standards of 10 micrograms per litre (µg/L). To remedy the situation, the City developed an Action Plan (AP) that included the elimination of LSLs over a 20-year period as part of its secondary water main replacement program.³ The goal of the AP was to eliminate, by 2026, the approximately 69,000 LSLs that were still present in the City according to another sampling program in 2006. The AP was approved in February 2007 by the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP).⁴

In 2013, to enable the boroughs to replace LSLs, city council (CC) delegated lead service line replacement (LSLR) to the boroughs by by-law⁵ as part of their local *Programme de réfection routière* (PRR) during complete reconstruction work of road infrastructure.

³ This is the local water system in the neighbourhoods that supplies the buildings with drinking water.

⁴ Decision-making record no. 1070593002, Ville de Montréal – MDDEP letter dated February 23, 2007.

⁵ *Règlement intérieur de la Ville sur la délégation de pouvoirs du conseil de la Ville aux conseils d'arrondissement*, city council, *By-law 02-002* adopted December 18, 2001, section 1, paragraph 4.1. One of the *By-law's* objectives is to streamline the procedure for approvals by City officials. Since the replacement of the LSLs is under the jurisdiction of CC, the delegation of authority to the borough councils will make it possible to reduce the time required to obtain the approval of City officials, since the borough council will be able to give its approval.

In the context of reviewing a by-law,⁶ the Commission permanente sur l'eau, l'environnement, le développement durable et les grands parcs (hereinafter the Commission) produced a report in 2014 that touched on the LSL issue, in which it mentioned that in total:

[TRANSLATION] "5,250 public-section water lines were replaced, 250 of which were in wartime housing. It was indicated that few citizens have performed the replacement of their section [private] of the line, resulting in a partial replacement configuration (Pb private/Cu public) in the case of 50% of the replacements performed by the City."⁷

The Commission made a number of recommendations, including achieving the objectives of the AP approved in 2007, accelerating the *Programme de remplacement de la section publique des entrées de service en plomb* and accelerating LSLR activities (with respect to private sections) using different approaches. As a result, starting in 2016, the City entered into partnership agreements to accelerate LSL screening and enable testing. Since 2008, 39,000 buildings have been tested.

To accelerate LSLR activities with respect to private sections (located on citizens' property), CC adopted a *By-law*⁸ in 2017 allowing it to replace the private sections of service lines. However, this by-law is only applicable in cases where a building's wall is located within a distance of 1.5 metre (m) of the public sidewalk. Prior to the adoption of this by-law, the City only replaced the public section of LSLs, leaving the decision to replace the private section up to the owner. The Service de l'eau (SE) then adopted directives for the boroughs and departments involved to speed up the LSLR work, particularly during certain roadworks.

⁶ *Règlement sur la canalisation de l'eau potable, des eaux usées et des eaux pluviales (chapter C-1.1 of the Règlement refondu de l'ancienne Ville de Montréal)*, city council, effective August 24, 2001.

⁷ Decision-making record no. 1144527002, Ville de Montréal.

⁸ *Règlement relatif au remplacement par la Ville de la section privée des entrées de service d'eau en plomb*, city council of the Ville de Montréal, *By-law 17 078* adopted August 21, 2017. The main objective in adopting the new by-law is to preserve municipal infrastructure and to harmonize practices throughout the City.

In March 2019, Health Canada lowered the guideline for the acceptable concentration of lead in drinking water from 10 µg/L to 5 µg/L – one of the most stringent standards in the world. In October 2019, the Québec government announced that it would amend its regulations to comply with this new Canadian guideline and, at the same time, change the sampling procedures for lead in drinking water. In doing so, it asked Québec municipalities to develop an AP to reduce lead in drinking water, following Health Canada’s recommendations. Thus, each municipality must cover the following points in its AP:

- areas of the municipality where buildings are likely to have an LSL;
- a timeline for identifying these areas;
- the period required to replace all LSLs on its territory;
- the cost of the process;
- the establishment of work priorities.

As a result, the City revised its 2007 AP and has a revised AP that will enable it to eliminate all LSLs on its territory by 2030. This revised AP, which was approved by the Québec government on October 11, 2019, and by the Direction régionale de santé publique (DRSP) on October 15, 2019, includes the following 6 actions:

- make an online map available to citizens to view information about the presence of lead in their building;
- accelerate screening to accurately locate all LSLs on the territory. The City will have tested tap water in approximately 100,000 buildings by 2022, with priority given to buildings housing family daycare and childcare centres, single-family homes, duplexes and triplexes;
- provide a filtration device at the time of screening when the presence of an LSL is confirmed;
- continue to accelerate the replacement of public-section LSLs. The City will have replaced all LSLs (approximately 48,000) by 2030;
- make the replacement of the private section of LSLs mandatory;
- prioritize the replacement of LSLs in wartime housing, single-family dwellings, duplexes and triplexes.

The 2020 budget that was approved by the City’s executive committee in November 2019 provides a total of \$557 million in investments that are planned over a 10-year period for the implementation of the *Programme de remplacement des entrées de service* in order to accelerate the implementation of the program and thus meet the recommendations issued by Health Canada in connection with the new standard for lead concentration in drinking water (5 µg/L).

Since December 2019 in particular, the SE has made a change in its organizational structure in order to organize its teams to deal with LSL screening, inspection and replacement operations in particular.

As of December 31, 2019, according to the City's estimate, approximately 21,000 LSLs had been replaced out of the total 69,000 LSLs estimated in 2007.

The boroughs of Côte-des-Neiges–Notre-Dame-de-Grâce (CDN-NDG) and Mercier–Hochelaga–Maisonneuve (MHM) are among the boroughs that were particularly concerned by the LSLR. As of December 31, 2019, these two boroughs had the most LSLRs, i.e., 2,822 and 2,621, respectively.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act* (CTA), we completed a value-for-money audit mission on the management of lead service line replacements. We performed this mission in accordance with the *Canadian Standard on Assurance Engagement* (CSAE) 3001, described in the *CPA Canada Handbook – Certification*.

The objective of our audit was to ensure that the implementation of the LSLR is progressing in accordance with the 2007 AP that was revised in 2019 and that the municipal regulations regarding replacement work are being enforced as intended.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control* (CSQC) 1 from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit focused on the period from the approval of the City's 2007 AP by the Québec government, in February 2007, to February 28, 2020. However, for certain aspects, data from before and after this period were also taken into consideration. Our work was mainly carried out between March 2020 and January 2021. We also took into account information that was sent to us up to March 2021.

Most of the work was carried out within the following business units:

- the Service de l'eau;
- the Côte-des-Neiges–Notre-Dame-de-Grâce borough;
- the Mercier–Hochelaga–Maisonneuve borough.

At the end of our work, a draft audit report was presented for discussion to the relevant managers in each of the audited business units. The final report was then sent to the management of each of the business units concerned to obtain an AP and a timeline for implementing the recommendations concerning them, as well as to the director general, the deputy director-general, Mobilité et attractivité, the deputy director-general of the Service aux citoyens and the director of the Service de concertation des arrondissements.

A copy of the final report was also sent, for information purposes, to the directors of the boroughs not directly concerned by our audit work to enable them to implement the recommendations where the situation warrants it.

3. Audit Results

3.1. Roles and Responsibilities

Several parties are involved in the screening and replacement of lead service lines (LSLs) necessary to implement the AP to eliminate LSLs. Table 1 summarizes the roles and responsibilities of the different business units audited.

Given the City's administrative structure, core activities such as implementation of the AP and communication with other levels of government are carried out by the SE. It also performs the vast majority of LSL screening operations and planning for LSLR work. In 2017 and subsequent years, the SE produced guidelines asking boroughs to accelerate their LSLR operations across a range of roadwork categories.

In the boroughs, we note a difference in screening operations, where the CDN-NDG borough has been conducting some screening operations since 2018, in contrast to the MHM borough, which has not. Both boroughs, however, are involved in issuing contracts for LSLR work.

For water fountains in parks and in municipal buildings,⁹ the SE considers that screening and replacement of LSLs is mainly the responsibility of the boroughs or of the Service des grands parcs, du Mont-Royal et des sports or of the Service de la gestion et de la planification des immeubles, depending on the type of park. Although the SE is not specifically responsible for LSLR activities involving water fountains, it nevertheless provides support to the boroughs and these central departments, including preparing screening protocols and providing testing equipment and training. However, in the two audited boroughs, no screening work¹⁰ related to water fountains in parks has yet been undertaken because the information

⁹ The water fountains in the City's parks and municipal buildings may contain lead, including in service lines.

¹⁰ The SE had tested 333 water fountains during the summer of 2019. However, in June 2020 a memo was sent to the boroughs with a new testing protocol attached, so that all water fountains would be tested including those that had already been tested in 2019. During the summer of 2020, the MHM, Lachine and LaSalle boroughs tested nearly sixty water fountains.

obtained from the SE to do so dates back to the spring of 2020 and no guidelines regarding the activities to be carried out for replacing these water fountains' LSLs have been communicated to them so far.

We therefore note a discrepancy in the roles played by the boroughs in detecting LSLs. This is due to the fact that there is no complete and accurate documentation in either AP (2007 and 2009 versions) to define all of the roles and responsibilities of the parties involved in the elimination of LSLs. Also, there is a grey area as to who is actually responsible for LSL screening and replacement operations for the water fountains in the City's parks. This grey area is due to the fact that this source of lead exposure in parks was never addressed in the 2007 AP nor in its revised version in 2019.

The fact that roles and responsibilities are not clearly defined for all of the activities relating to the elimination of LSLs does not facilitate their communication and creates a risk that responsibilities may not be assumed for activities or assets that are affected by the elimination of LSLs.

TABLE 1

Roles and Responsibilities of the Audited Business Units in the Elimination of Lead Service Lines

Activities	Service de l'eau	Boroughs	
		Côte-des-Neiges-Notre-Dame-de-Grâce	Mercier-Hochelaga-Maisonneuve
Interlocutor for the Ville de Montréal with the Ministère de l'Environnement et de la Lutte contre les changements climatiques and the Direction régionale de santé publique	Self-assigned due to the department's activities	None	None
Implementation of the Action Plan		Participation	Participation
Screening		A little since 2018	None
Lead service line replacements	Planning of the replacements	Awarding of contracts for the work	Awarding of contracts for the work
Water fountains in the parks	Screening	Support to the boroughs and performance of part of screening operations	None
	Lead service line replacements	None	None

3.1.A. Recommendation

We recommend that the Service de l'eau ensure that the roles and responsibilities of all relevant stakeholders are clearly defined, documented, communicated and approved by the Direction générale to facilitate enforcement and to promote effective implementation of the Action Plan for eliminating lead service lines.

3.2. Implementation of the Action Plan

3.2.1. Implementation

Since screening operations began, 39,000 buildings have been tested (see Table 2). The AP that was revised in 2019 and approved by the MELCC and the DRSP called for screening 100,000 buildings (see Table 3). However, our audit work revealed that, once the AP had been approved, the number of buildings to be tested and analyzed increased for the following two reasons (see Table 3):

- Firstly, because it could not explain why approximately 40,000¹¹ buildings had been identified as not having LSLs in a real estate assessment roll review at the time, the SE was forced to reconsider them as buildings to be tested.
- Secondly, approximately 21,000 buildings are to undergo an analysis even though, since 2007, the public section of the LSL has been replaced, because the City does not know whether the private section of the ESP is made of lead and, if so, whether it has also been replaced. Indeed, when the public sections of LSLs were replaced, few citizens replaced their portion. According to the SE personnel with whom we met, based on visual observations of part of the private sections of LSLs during work to replace the public sections, approximately 35% of these 21,000 service lines may contain lead, which represents a significant number of buildings. In addition, it is only since 2018 that the City also replaces the private section when it replaces the public section, provided that the building is located within 1.5 m of the sidewalk.

TABLE 2

Number of Buildings Tested Since 2007

Between 2007 and 2016	2017	2018	2019	Total as of December 31, 2019
13,396	4,922	8,889	11,547	38,754

Source: Ville de Montréal, Service de l'eau.

In the original AP, as in the revised version, the SE estimates that 69,000 LSLs need to be replaced on the City's territory (see Table 3). At the end of 2019, still according to the AP, 48,000 LSLs were to be replaced, i.e., close to 70% of the original target. However, considering that the service lines of about 40,000 additional buildings are to be tested, a situation subsequent to the revised AP, the estimate of the number of LSLs in the revised AP should be reviewed and confirmed.

¹¹ The figure of 40,000 buildings to be screened is still under review and is subject to change.

TABLE 3

2019 Action Plan Objectives and Status of Lead Service Line Screening and Replacement

2019 Action Plan Objective	Status
Screening component	
100,000 buildings to be tested by 2022	Close to 39,000 LSLs screened as of January 24, 2020. 100,000 buildings to be tested (included in the 2019 Action Plan).
	Approximately 40,000 new buildings to be tested (not included in the Action Plan and discovered in 2019 once the Action Plan approved).
	Approximately 21,000 buildings – analysis to be done (identification of lead service lines in the private section due to the public section having been replaced).
	No mention of screening in the Action Plan for water fountains in parks.
Replacement component	
Replacement of 69,000 lead service lines by 2030	Estimated 21,000 ESPs replaced between 2007 and December 31, 2019.
	Water fountain lead service lines to be replaced: unknown number (not included in the 2019 Action Plan).
	As of December 31, 2019: estimated 48,000 public-portion lead service lines to be replaced pursuant to the Action Plan (including 16,800 private-section lead service lines to be replaced by the City [estimate as of October 23, 2019]).
	As of October 23, 2019: Replacements required in 154 “post-war” buildings.
	No mention in the Action Plan of replacing the lead service lines of the water fountains in the parks. The winter 2020 communication plan in connection with the replacement of lead service lines states “ <i>Plan d’action pour les fontaines et les bâtiments municipaux encore inconnu</i> ”.

Source of the figures: 2007 Action Plan, 2019 Action Plan and Service de l’eau, Ville de Montréal.

Considering that less than two years after the approval of the revised AP, additional work has already been identified for screening and for water fountains in the parks and that this will most certainly have an impact on LSLRs, it seems essential to us that the AP be updated again.

Since 2007, in addition to the APs, the SE has adopted various strategies to achieve and accelerate the replacement of LSLs, including the following:

- 2007: LSLRs carried out during the reconstruction of drinking water lateral mains;
- 2008: LSLRs added during the rehabilitation of drinking water mains;
- 2013: CC adopts regulation to delegate LSLR operations to the boroughs in the event of complete reconstruction of the road infrastructure within the framework of the local PRR;
- 2016: One-off contracts concluded (also called LSLR contracts) dedicated to LSLRs following requests from citizens and for “post-war” buildings;
- 2017: Guidelines issued by the SE to the boroughs and departments concerned for LSLR during road reconstruction or pulvo-stabilization contracts¹² and contracts involving the reconstruction of more than 50% of the sidewalks;
- 2018: Memorandum issued by the SE to recommend that boroughs replace LSLs during pavement resurfacing work;
- 2018: CC adopts a by-law for the City to replace, at the owners’ expense, the private section in the case of buildings located within 1.5 m of the sidewalk.

Despite the use of these different strategies since 2007—and especially since 2016—there remains a great deal of work to be done in order to comply with the provisions of the AP in terms of LSL screening and replacement. Since 2007, LSLR operations have not evolved in a sufficiently sustained manner. It is only since 2017, i.e., 10 years after the AP began to be implemented, that LSLR operations have accelerated (see Table 4). Yet, although the SE has been encouraging the boroughs to replace LSLs through guidelines and memorandums since 2017, it is only recently that the two audited boroughs have accelerated LSLR operations.

¹² The pulvo-stabilization technique consists of scarifying the pavement and mixing it in with the underlying aggregate in a single operation. A binding agent is injected in order to obtain a reinforced foundation with the materials present on site.

TABLE 4

Number of Lead Service Lines Replaced Since 2007 (and Before)

2007 and before	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 estimé	Total
304 (822 before 2007)	758	869	583	257	1,245	511	1,787	1,482	1,407	2,244	4,449	4,669	21,387

While the SE has resorted to a host of strategies over the years to accelerate LSLRs, we have not been able to track down any documented evaluation of the contracts and works as a whole to determine which ones require the involvement of the boroughs, are more conducive to LSLRs and have the least impact on the boroughs’ assets. Nor did we find any documented analysis that examines whether the replacement prescribed and proposed in the directives and memorandums, within the framework of the various works, for example concerning the contracts identified as “LSLR,” is harmonized with the by-laws respecting LSLRs, notably *Règlement O2-002 sur la délégation de pouvoirs du conseil de la Ville aux conseils d’arrondissement*, which could create some sort of confusion or lack of understanding of the approach that the boroughs are required to follow.

One of the activities provided for in the 2019 AP is to “[TRANSLATION] mandate the replacement of the private section of lead service lines.” The City currently has an issue with the private sections of LSLs for which the public section has already been replaced. No strategy has been communicated to the citizens in that respect to date, and there are approximately 21,000 buildings for which the City must conduct an analysis to determine the status of the private section of the service line for which it has already replaced the public section. As mentioned previously, the SE estimates that the private section of up to 35% of these service lines could be made of lead, i.e., nearly double the number of LSLs replaced by the City in 2019. Since the replacement of the public sections for these 21,000 buildings has been completed, replacing the private sections is now the citizens’ responsibility. They will have to carry out the required work at their own expense. It is therefore important that a strategy be developed to guide the deployment of this activity provided for in the 2019 AP and that it be issued in such a way that citizens understand all of the issues (e.g., health risk, notice of infraction if the replacement is not done) that will affect them in the event that the presence of an LSL has been confirmed on their property.

At the time the revised AP was approved in October 2019, the DRSP had requested that the City provide

[TRANSLATION] “...temporary protection measures for the citizens concerned until their LSL has been replaced in full, in order to reduce financial barriers to the application of these voluntary measures with a view to reducing social inequalities with respect to health. Such measures would be particularly relevant for pregnant women, infants and young children but would also reduce risks for the rest of the population.”

The SE had committed in its AP to respond to this request from the DRSP by implementing additional mitigation measures, including the distribution of water jugs, filters and other filtration devices, as of October 23, 2019, to citizens as well as daycare centres having tested positive. At the time of our audit, these filtration devices had not yet been distributed to all categories of citizens affected by a positive screening. Only 321 water jugs had been distributed out of 564 jugs requested as of May 2020 by low-income individuals eligible for the temporary mitigation measures. As of July 2020, the personnel responsible for the delivery of these devices had not yet been fully hired to ensure the distribution to the remaining affected population.

Also at the time the revised AP was approved, the MELCC, like the DRSP, had made various recommendations to the City, including:

[TRANSLATION] "...list all non-replaced private service lines, record them in a publicly accessible database, and ensure the execution of the work to be completed."

To this effect, the City makes an interactive map available to citizens on its website. However, a review of this map showed that it does not yet include the replacement work or the private LSLs replaced and therefore does not provide accurate and up-to-date information to citizens.

It is important that the SE take these recommendations made by the DRSP and the MELCC into consideration as part of the AP and see to their implementation. The City, in filing its AP with the DRSP and the MELCC, has made the commitment to the Québec government to eliminate LSLs. The additional recommendations made by the DRSP and the MELCC further demonstrate the importance of eliminating LSLs for public health reasons.

3.2.1.A. Recommendation

We recommend that the Service de l'eau, in collaboration with all of the boroughs concerned, revise the Action Plan so that it includes all the aspects related to the elimination of lead service lines, as well as new data concerning the number of tests to be performed, and that it take into consideration the recommendations of the Direction régionale de santé publique and of the Ministère de l'Environnement et de la Lutte contre les changements climatiques. We also recommend that it determine the most appropriate strategy to accelerate the screening and replacement of lead service lines, with a view to meeting the 2030 deadline.

3.2.1.B. Recommendation

We recommend that the Service de l'eau, in collaboration with all the boroughs concerned, provide a framework for the deployment of the various steps to be carried out pursuant to the obligation for citizens to replace the private section of their lead service line for which the public section has been replaced, the goal being to ensure that citizens understand all the issues affecting them when the presence of a lead service line has been confirmed.

3.2.1.C. Recommendation

We recommend that the Service de l'eau complete the implementation of the recommendation in the Action Plan concerning mitigation measures and evaluate the effectiveness of these measures in order to adjust them as needed to reduce public health risks.

3.2.2. Timetables, Targets, Indicators and Progress Assessment

Timetables

An overall timetable for the elimination of LSLs by 2026 was established in the 2007 AP. In the revised 2019 AP, the target date was changed to 2030. In addition, while the 2007 AP did not include a specific timetable for screening, the 2019 AP has one to ensure that accelerated screening for the remaining 100,000 buildings is completed by 2022. However, since this revised AP was adopted, the number of required screenings has increased to approximately 140,000, which raises questions about how realistic this specific timetable is. In addition to this, there is also the work of analyzing the private section of the 21,000 service lines for which the public section has already been replaced by the City.

While a specific timetable has been established for screening, no date is specified for the completion of several other operations in the revised AP. Thus no specific timetable has been set for:

- inserting replacement data in the interactive map made available to citizens;
- implementing protective and mitigating measures (e.g., water jugs);
- replacing the LSLs of single-family homes, triplexes and duplexes, including daycare centres, on a priority basis.

As with screening, we believe it is important that specific timetables be established for these activities. For example, updating the interactive map is an activity that must be carried out as quickly as possible in order to inform citizens about the required replacement or not of their building's LSL. The MELCC recommended that the City establish a registry of non-replaced LSLs for the purpose of informing the public.

A specific timetable for screening is important since replacement work is planned accordingly. The sooner all buildings are tested, the easier it will be to plan LSLR operations. It is therefore important that the screening timetable be reviewed in light

of the new number of buildings to be tested. A detailed timetable would allow for better monitoring of the progress made with respect to each of these activities while providing a clearer picture of what has been achieved and what has not.

Targets

The revised AP aims to conduct approximately 33,000 screenings per year in order to reach the goal of 100,000 buildings tested by 2022. Considering that the number of buildings to be tested has since increased to approximately 140,000, this target is no longer adequate unless the timetable is adjusted. Furthermore, to meet the goal of replacing 48,000 LSLs by 2030, the revised AP aims to replace approximately 5,000 LSLs per year. These are the only two targets in the revised AP that can help the SE set a certain pace to meet its targets by the given deadline. No target has been set for the other activities in the revised AP, including:

- replacing the LSLs of priority buildings (e.g., single-family homes, triplexes and duplexes, and daycare centres);
- the City replacing the private section of LSLs (on citizens' property);
- citizens replacing the private section of their LSL (mandatory measures) in cases where the City did not replace the private section when the public section was replaced.

As with the screening and replacement of LSLs, we believe it is important that specific timetables be established for these activities. This would allow for more detailed monitoring of the progress made on each of these activities while providing a tool to measure the results of the interventions.

Indicators

The SE has developed indicators to assess the results of activities relating to screening and the distribution of water jugs. Nevertheless, at the time of our audit, we were unable to track indicators to assess progress in achieving targets for the following activities:

- compiling or updating the interactive map;
- the City replacing the public and private sections of LSLs;
- citizens replacing the private sections of LSLs and activities related to measures taken to make it mandatory for citizens to replace the private sections of their LSLs.

Both of the observed indicators provide little detailed information on progress toward achieving the target. As an example, we obtained a document showing the progress of the screening in 2019 based on indicators. The indicators used are worded as follows: *[TRANSLATION]* "monthly target" and "number of screenings." The indicators measure only the number of screenings achieved per month. They do not refer to the total number of buildings to be tested. Consequently, from this

document, we are not able to determine the progress of the screening activity with respect to the total number of buildings to be tested.

It is essential that more and better indicators be developed to measure the results and progress of all AP activities.¹³ The absence of specific indicators does not allow the performance of the activities carried out and of the AP as a whole to be monitored or evaluated. As a result, decision-makers do not have access to quality information on the degree of progress – in connection with the evaluation of the performance of the actions that are implemented – to be able to make informed decisions.

Performance Assessment of the Implementation of Action Plan Activities

We traced documents that reported an evaluation of certain activities regarding the implementation of the revised AP, including:

- the progress of LSL screening activities for the year 2019;
- the monitoring of the distribution of water jugs under the *Programme des personnes à faible revenu* for the period from January to May 2020;
- the response time to emails in the lead file for the period from October 2019 to May 2020.

A review of these documents, however, shows that the performance assessments are only for the year 2019 and part of 2020. With respect to assessing the progress of the screening, the document does not present any assessment in terms of the total number of tests completed and to be completed. It is therefore not possible to know the progress achieved with respect to screening since the beginning in terms of the total number of buildings to be tested. We did not locate any other performance assessment documents related to screening activities.

Although LSLR is one of the most important activities of the AP, we were unable to track any performance assessment for this activity or for the implementation of the AP in its entirety. The absence of a performance assessment of the AP makes it impossible to determine whether the measures put forward for each activity are effective or to clearly identify problems in order to make the required corrections to help the implementation of the AP move forward. There is a risk that the AP will not progress and be achieved as planned.

3.2.2.A. Recommendation

We recommend that the Service de l'eau revise the target in relation to the established screening timetable to reflect the new number of buildings to be tested, the goal being to ensure that the screening of lead service lines is completed as soon as possible to provide a complete picture of the lead service lines that will need to be replaced.

¹³ Since the end of the period covered by our audit, i.e., since February 2020, the Service de l'eau has reportedly begun to develop new indicators to monitor progress in implementing the Action Plan. These indicators were only used starting in August 2020 for the July 2020 balance sheet.

3.2.2.B. Recommendation

We recommend that the Service de l'eau include timetables, targets and indicators for all of the activities in the Action Plan to replace the lead service lines, the goal being to allow for follow-up, measure the results obtained, assess the progress of the Action Plan and make any necessary adjustments.

3.2.2.C. Recommendation

We recommend that the Service de l'eau adopt a documented mechanism and periodically assess the performance of the implementation of all of the activities in the Action Plan to replace lead service lines, the goal being to identify problems and make any necessary adjustments.

3.3. Monitoring the Implementation of the Action Plan

3.3.1. Monitoring the Action Plan

Our audit revealed that employees from different sections and divisions within the SE are assigned to monitor the implementation of the various AP activities. In the boroughs also, employees are involved in monitoring LSLR activities mainly.

While various documents are used for monitoring purposes, for example, an Excel file used to track the number of LSLs replaced per borough and a document used to track the replacement reports filed for 2019, we observed that certain aspects of the monitoring work lacked rigour. Indeed, before 2019, these reports were requested from the people in charge of carrying out work on the City's territory only at the end of the year, i.e., once the work had been completed. There was therefore a risk that the SE would not receive all of the reports and, as a result, would not be able to update the situation, particularly on the interactive map intended to inform citizens, and that it would not be able to report on the progress made in implementing the AP.

Thus, the situation in relation to the SE's knowledge of LSLR work was as follows:

- For the year 2020¹⁴: data are not yet available;
- For the year 2019: replacement reports are still missing (almost 4%);
- For the year 2018: although the reports may have been recovered, they have not yet been accounted for and the missing data in these replacement reports has not yet been assessed. Such an exercise would provide a picture of the number and type of missing or erroneous information in order to improve the monitoring when the people in charge of carrying out the work enter the information in the replacement reports;
- For the years 2007 to 2017: the proportion of missing reports is not known, as the SE had not counted the LSLR reports obtained during this period.

¹⁴ The scope of our work in 2020 covers the months of January and February only. LSLR work is not carried out during this winter period. It is therefore expected that data would not yet be available.

Regarding the replacement of water fountain LSLs, although the SE had conducted tests during the summer 2019 period, no follow-up had been carried out by the SE or the boroughs during the period covered by our audit.

In addition to the difficulty that the SE has in obtaining LSLR reports, there might also be issues related to the coordination of LSLR work in certain contract categories, human resource requirements in the boroughs for screening and the involvement of more boroughs in LSLR work. However, we did not track any specific documented follow-up on such issues that are nevertheless related to activities required to implement the AP. Monitoring the AP cannot be reduced to technical aspects alone. Implementing the AP activities involves a certain level of complexity and several stakeholders. Not taking these issues into consideration in a follow-up does not foster effective implementation of the AP.

3.3.1.A. Recommendation

We recommend that the Service de l'eau monitor lead service line replacement activities, including the review of lead service line replacement reports, to address specific issues and situations that may have an impact on the implementation of the Action Plan.

3.3.2. Data Collection, Compilation and Validation

The Collection and Compilation Process

Screening is the activity that consists of testing drinking water for each selected building to determine whether or not lead is present according to the current standard or guidelines. Once the analysis has been performed using the prescribed equipment, the results obtained must be recorded in a file kept for this purpose. It is on the basis of this data that it is possible to assess the progress made in implementing the AP, to make the necessary decisions regarding the follow-up on its implementation and to ensure appropriate accountability.

With the exception of training documents for screening trainees and screening protocols, we could not locate any policy or guidance regarding the collection and compilation of screening results. The staff of the SE with whom we met told us that technological tools and a new computerized application were used to improve the collection and compilation of screening results.¹⁵

The staff we met in the CDN-NDG borough said that, in general, data regarding screening activities carried out in the borough is sent to the SE. However, we were told that the borough did not always provide all of the data related to the screening activities that it had carried out. We believe it is important that all screening data be collected and compiled seeing as the lack of such data has an impact on the means of communication intended for citizens, particularly the interactive map.

¹⁵ The new application, in use primarily since 2020, is still in development.

We conducted tests on the screening data in relation to the data collection and compilation processes. LSLR reports from the two audited boroughs for the year 2019 were used to select the samples in order to compare the data from the SE's screening files with the interactive map data. We sampled 15% of the addresses included in these reports for each borough. It is important to note that LSLR reports provide the actual condition of the service line at the time the work is carried out, i.e., whether the service line is made of lead, while the screening confirms the presence of an LSL without the replacement work having been carried out. For the combined data from both boroughs, the tests show that 27% of the data presents different problems in the collection and compilation processes. In the course of these tests, we noted that there is a risk of confusion for citizens due to the information disclosed on the interactive map for the following reasons:

- In 9% of cases, when the Excel file of the screening data indicates no analysis, i.e., no screening, the replacement report and the interactive map indicate the presence of an LSL;
- In 5% of cases, when the Excel file of the screening data indicates no analysis, the interactive map indicates that there is no LSL, whereas in the field, the replacement report indicates the presence of an LSL;
- In 3% of cases, when the Excel file of the screening data does not include information, the replacement report indicates the presence of lead and the interactive map indicates the possible presence of lead;
- The remaining 10% of cases are individual cases where the information provided in the three locations is inconsistent and sometimes contradictory. For example, the Excel file of screening data indicates the absence of an analysis, the replacement report indicates the presence of an LSL and the interactive map indicates the absence of an LSL.

LSLR activities also generate data, as they involve work done to replace the LSL with a new line made of an approved material. However, this data is not added to the interactive map, making it currently impossible for a citizen to know whether the City has actually replaced the LSL at a given address.

As with the screening data, we looked for the existence of a framework used to collect and compile the data resulting from LSLR work. We tracked a guideline produced in March 2017 and revised in December 2017 which includes provisions for the collection and compilation of data regarding LSLR work. It had been sent to the stakeholders involved in the LSLR, asking them to collect and compile data in a specific database. However, this database ceased to be used in 2019 and was permanently closed in January 2020. For the period of our audit, this guideline was still in force. It had not been modified to explain the new procedure for collecting and compiling information.¹⁶

¹⁶ A new guideline was produced in July 2020 by the Service de l'eau. It includes a new approach to data collection and compilation.

In April 2019, a memorandum was sent to the stakeholders involved in LSLR work in order to standardize the use of LSLR reports. However, as described above, our audit revealed problems with the follow-up in terms of retrieving LSLR reports.

With respect to LSLR work carried out by citizens themselves, we did not find any procedure used to collect and compile data related to such work. Also, we were unable to trace any data logs of private sections of LSLs replaced by citizens. We obtained screening reports from the CDN-NDG and MHM boroughs indicating that citizens at certain addresses had themselves had their part of the LSL replaced. These reports also indicate that several private sections of LSLs had been replaced. However, the SE still does not keep a register of data on the private sections of LSLs. As a result, it is not possible to obtain the complete list of the data regarding the replacement of private sections of LSLs.

The lack of a specific framework for collecting and compiling data on all AP activities poses a risk to the accuracy and completeness of the data, as data reports are missing even after several years. Furthermore, there is no mechanism to provide the assurance that all reports and data have been retrieved. This has a significant impact because it is currently not possible to insert all the LSLR data into the interactive map created to inform citizens and therefore enable them to make informed decisions. Nor is it possible for the people in charge of the work to have access to all the data to more easily plan the work.

Although activities have been carried out to improve the data collection and compilation process, additional efforts will be required to ensure that all of the required data is collected and compiled and that this process is documented.

The Validation Process

With respect to screening activities, we did not find evidence of a documented data validation exercise or of documents confirming the reliability of the data. For example, there is no record of how the 2007 data on buildings that may have an LSL had been extracted. After the adoption of the revised AP in 2019, the SE re-examined the real estate assessment roll using criteria such as “[TRANSLATION] built before 1970” and “[TRANSLATION] 8 dwellings and less” while taking care to exclude large buildings such as shopping centres and warehouses. This exercise results in approximately 40,000 new buildings to be tested for the possible presence of an LSL. Despite the experience of not having documented the methodology in 2007, the methodology for 2019 was not documented either. The absence of such documentation does not allow employees who must subsequently act in this matter to fully understand what has been done, especially since the replacement of LSLs is governed by a timetable that now extends from 2007 to 2030.

With respect to LSLR work, the SE staff members we met with said that they had conducted a verification exercise on the 2018 data. For the years 2007 to 2017 and 2019, a verification exercise of the replacement data is reported to be currently under way. However, we found no evidence that this entire verification process was documented, including for the year 2018 for which the SE staff we met with confirmed that all replacement reports had been obtained. Also, we could not locate any document to support the reliability of the LSLR data. In the audited boroughs,

although there is reportedly a process for validating data on LSLR work, no evidence of the process or its implementation could be provided to us.

We found that one member of the SE's staff developed a checklist for validating LSLR data reports. However, the SE staff told us that the validation process performed is limited to the Excel files received. The staff does not field check to determine whether the person in charge of carrying out the work or the site supervisor has collected, compiled and validated the data.

Our audit allowed us to observe that several employees of the City, the boroughs and the construction site supervision firms are involved in the processes of collecting, compiling and validating LSLR data. In such a context, the absence of a mechanism to oversee the validation process means that data may be missing and that the reliability of existing data cannot be confirmed. Since this data is used to plan replacement work, is and will be communicated to citizens to enable them to make decisions concerning them and is used for accountability purposes, the City must ensure its completeness and accuracy.

3.3.2.A. Recommendation

We recommend that the Service de l'eau establish a mechanism to oversee the processes for collecting, compiling and validating data related to the screening and replacement of lead service lines and document the application of these processes to demonstrate the thoroughness of the approach used, to provide assurance of the completeness and reliability of the data and to demonstrate this assurance as required.

3.3.3. Monitoring Regulations and Guidelines

In order to speed up LSLR work in particular, CC adopted two by-laws and the SE issued guidelines and memorandums over the years

As a result of *By-law O2-002*,¹⁷ when a borough contracts for the complete reconstruction of pavement infrastructure as part of a local PRR, it will be required to replace the LSLs, if applicable. A review must therefore be conducted on a contract-by-contract basis to determine whether the conditions for the application of the by-law are met and whether the by-law therefore applies.

¹⁷ *Règlement intérieur de la Ville sur la délégation de pouvoirs du conseil de la Ville aux conseils d'arrondissement*, city council of the Ville de Montréal, *By-law O2-002* adopted December 18, 2001, section 1, paragraph 4.1. Amendments to the By-law on July 4, 2013, September 23, 2013, August 21, 2017, and June 15, 2020, regarding LSLs.

Under *By-law 17-078*,¹⁸ the City may perform LSLR work on private property when specific conditions are met. However, this by-law only applies in cases where a building's wall is located within a distance of 1.5 m of the public sidewalk. Upon completion of a roadwork or LSLR contract, a review should be conducted to determine whether the by-law applies to the private sections of LSLs in order to replace them, if necessary. The replacement of the private section of the LSL is at the owner's expense.

Application of *By-law 02-002*

In the case of the two audited boroughs, contracts were carried out under the local PRR. However, these documents do not specifically refer to *By-law 02-002* or to a review of contracts to determine whether or not the conditions for the application of the by-law are met with respect to the replacement of LSLs.

The CDN-NDG borough only started carrying out LSLR work in 2018, while the by-law was adopted in 2013, and, for the years 2013 to 2017, the borough carried out several local PRRs. For 2018, the borough has included LSLRs in two local PRRs. However, it is not clear from the documents reviewed whether all of these local PRRs, for the year 2018, have been reviewed to determine whether the by-law applies. Consequently, even for the year 2018, there is no evidence that shows that the by-law was perfectly applied. For 2019, the borough replaced LSLs primarily in another form of project and not through local PRRs specifically. As a result, two contracts were awarded that were solely for replacing LSLs. For these contracts, we have no evidence that they were reviewed to determine whether the by-law applies.

Documents obtained from the MHM borough show that it carried out LSLRs under local PRRs between 2014 and 2019. However, for 2017 and 2018, the nature of the information contained in these documents does not support the conclusion that the local PRRs included the LSLRs. For 2017, a decision-making record awarding a contract under the local PRR for the reconstruction of the pavement and sidewalks on six local streets does not include a review of *By-law 02-002* in connection with the LSLR. For 2019, the borough included LSLRs in local PRRs as well as pursuant to contracts.

Based on these findings, the City does not have the assurance that all local PRRs were completed in accordance with the by-law.

¹⁸ *Règlement relatif au remplacement par la Ville de la section privée des entrées de service d'eau en plomb*, city council of the Ville de Montréal, *By-law 17-078*, adopted on August 21, 2017. The by-law took effect in January 2018. Amendment to the *By-law* on June 18, 2018. *By-law 17-078* was repealed by *By-law 20-030* in June 2020, which incorporated the provisions of *By-law 17-078*. *By-law 20-030* was in turn amended in December 2020 and the replacement of the private section is no longer limited to LSLs located within 1.5 m. Work on the replacement of the private sections of LSLs (full program) has not yet begun.

Application of *By-law 17-078* (replaced by *By-law 20-030* in June 2020)

We were unable to locate any document indicating that the CDN-NDG borough reviewed *By-law 17-078* in 2018 in connection with contracts or work to replace the public sections of LSLs to determine whether there are any private sections of LSLs that need to be replaced. The borough states that it did not replace private sections of LSLs. For 2019, there are replacement reports for buildings that confirm that the public sections of LSLs were replaced and that the distance of the LSL from the private section was assessed to determine whether it was within 1.5 m of the public sidewalk. However, we found no evidence that all contracts or work done in 2019 were subject to such reviews regarding the application of *By-law 17-078*. Based on our review of the decision summaries for contracts awarded for work including LSLRs for the years 2018 and 2019, we noted that these contracts have not taken into consideration the *By-law 17-078* and the LSLR of the private section.

For the MHM borough, there exists a summary table of LSLR work for the years 2014 to 2019 which refers to this by-law. Reports also exist for 2019 indicating that the private sections of LSLs were replaced as part of local PRR work. However, since there were several question marks entered in the 2018 summary table regarding the application of the by-law, we do not have evidence that the regulation was applied for all contracts and work carried out in 2018.

The by-law provides that the cost of replacing the private section of an LSL and connecting it to the water system is charged to the owner. The SE is responsible for compiling the LSLs that are replaced on private property and sending this data to the City's Service des finances (SF) in order to bill the citizens concerned. Yet the 2018 data file, i.e., the first year after the by-law took effect, was sent to the SF in February 2020. It was therefore more than a year after the LSLRs before the City was able to bill the owners for the work completed pursuant to this by-law.

Guidelines and Memorandums of the Service de l'eau

With respect to the guidelines and memorandums produced by the SE, we did not find evidence of documented follow-up by the SE. This does not provide the assurance that the guidelines and memorandums were applied by all of the stakeholders. In the absence of documented follow-up, it is more difficult to accurately assess problems with the implementation or application of these guidelines and memorandums. Nor have we traced any evidence that a person has been officially appointed in this regard.

It is important that mechanisms be developed to provide the assurance that guidelines and memorandums are followed up and documented. This would make it possible to better identify implementation or application problems and make the necessary corrections to achieve the objectives of the AP with respect to replacing LSLs.

3.3.3.A. Recommendation

We recommend that the boroughs of Côte-des-Neiges–Notre-Dame-de-Grâce and Mercier–Hochelaga–Maisonneuve set up documented follow-up mechanisms to ensure that all by-laws concerning the replacement of lead service lines, whether they are under the direct jurisdiction of the borough through a delegation of powers or otherwise, have been applied and to help identify problems related to the application of these by-laws to allow for the necessary corrections to be made.

3.3.3.B. Recommendation

We recommend that the Service de l'eau implement mechanisms to ensure data is processed for the purpose of billing the replacement of the private sections of lead service lines so as to enable the Ville de Montréal to recover the costs it incurred as quickly as possible.

3.3.3.C. Recommendation

We recommend that the Service de l'eau document the implementation of the guidelines and memorandums related to the replacement of lead service lines by the stakeholders in order to facilitate the identification of implementation problems and to make the necessary corrections as soon as possible.

3.4. Means Used to Communicate with Citizens

The issue of LSLs is a public health concern for which the City is not solely responsible. Since service lines are composed of both a public section and a private section, citizens are also responsible. It is therefore important to provide these citizens with information to enable them to make informed decisions, especially when it comes to LSLR.

In order to inform citizens about LSLs and the health risks they pose, the City has set up various means of communication, particularly the interactive map and the City's website.

The Interactive Map

The interactive map available on the City's website is intended to inform citizens whether or not there is an LSL at a given address. The occupant affected by the presence of an LSL can therefore purchase a water jug (e.g., a lead filtration system) until the replacement work is carried out on the public section and the building owner has the private section of the LSL replaced.

As of February 19, 2020, we noted that¹⁹:

- The City is making an online map available on which it is possible to consult the results of the LSL screenings carried out on its territory;
- These results are based on all testing conducted between 2007 and 2019 as well as on assumptions used by the City (e.g., year of construction and number of units) for buildings that were not tested;
- Data on the replacement of the public sections of LSLs was not available for consultation;
- The most recent update to the interactive map was made on November 21, 2019.

For a given address, four different messages can be displayed when the interactive map is consulted:

- *It is possible that there is at least one lead service line on the lot at this address;*
- *Tests conducted by the City confirm the presence of at least one lead service line at this address;*
- *The building located at this address was built after 1970 and/or consists of more than 8 units. The presence of an LSL is therefore unlikely;*
- *There is no LSL located at this address.*

This map gives citizens access to only partial information as it is not populated with data on LSLRs. If citizens cannot know whether or not the LSL at a given address has been replaced, they are unable to make informed decisions regarding their health or that of the building's occupants and the work to be done, if required. Furthermore, the message on the website leading to access to the map, which says that "[TRANSLATION] ...data regarding the replacement of the public sections of LSLs will be integrated at a later date", does not allow citizens to fully understand the importance of this data for the decision-making process that may affect them. Citizens are not necessarily specialists in this field, but they should nevertheless be able to understand and easily assess the consequences of the absence of LSLR data. LSLR work has been carried out since 2007 and, although the data exists, citizens do not have access to it. The map therefore does not reflect the actual situation. Additional information is necessary to help citizens understand the issues surrounding the absence of data.

Between the months of June and August 2019, the SE conducted 333 tests to detect the presence of lead in the City's water fountains in parks. However, although the last update of the map was after this period (November 21, 2019), the data does not appear on the interactive map. According to the SE, data regarding water fountain

¹⁹ An update to the interactive map was made on December 8, 2020. Results of screening conducted during the year 2020 were inserted in the map. Information regarding LSLRs is not yet available on the map. Information about water fountain screening is not yet available on the map.

screening is not yet included in the interactive map or any other similar map. Although this information concerns City property, citizens drink water from the fountains in the City's parks. They are therefore affected by the test results.

As previously mentioned, we assessed the concordance between the data provided in the LSLR reports obtained from the two boroughs, the data found in the SE's screening Excel files and the information provided on the interactive map. In the case of 25% of the addresses sampled from the replacement reports, the information on the interactive map does not match the information provided in the other documents. In most cases, the LSLR report indicates the presence of lead whereas the interactive map indicates the absence of lead or the possibility of lead. Based on the information made available by the City through this map, there is a risk that citizens will make erroneous decisions regarding the replacement of their LSL or their drinking water consumption – with consequent impacts on their health.

The Website

The City's website at the time of our work on February 17 and 19, 2020, had a tab entitled "*Problématique du plomb*" [TRANSLATION] "*Problem of lead*" and various subsections including one on "*Plan d'action remplacement*" [TRANSLATION] "*Replacement Action Plan*" outlining the 2019 AP and the six actions implemented by that plan and "*Avez-vous une entrée de service en plomb?*" [TRANSLATION] "*Do you have a lead service line?*" describing various precautionary measures to be taken before consuming water if lead is present. However, this tab of the City's website did not present any information regarding the LSLs connected to the water fountains in the City's parks and buildings.

As a result of our audit, the City's website has been modified to include information regarding the LSLs connected to the water fountains in the City's parks and buildings. However, not all water fountains have yet been tested or had their LSLs replaced. It is therefore important that the website be updated to provide periodic information on the progress of these activities.

In addition, the website provided more limited information regarding the status of all aspects of the LSL replacement AP. This goes against the recommendation of the DRSP which asked the City in October 2019:

[TRANSLATION] "...to act transparently by informing the public of the presence of LSLs on its territory and the progress of its intervention plan."

As a result of our audit, new information has also been added regarding the progress of AP activities, including mitigation measures and the replacement of private sections of LSLs by the City. However, these activities have not yet been completed. The website will therefore need to be updated in order to present information on a regular basis on the progress and implementation of all of the activities provided for in the AP.

The City's website is a means of communication that provides the public with quick and easy access to information on LSLs at any time. Although efforts have been made to provide citizens with a certain amount of information about lead on the City's website, this remains a public health issue. The public has a right to know about the progress of the AP measures as it is affected, in particular by the replacement of LSLs and the implementation of mitigation measures. It is important that the website provide more complete information on the lead issue and on the progress made with respect to the implementation of the LSLR AP.

3.4.A. Recommendation

We recommend that the Service de l'eau ensure that the interactive map is updated with data on the replacement of lead service lines and the screening of water fountains on a regular basis, and that the information leading to access to the interactive map regarding the absence of replacement data be more explicit so that members of the public can make informed decisions to eliminate or reduce the risk to their health.

3.4.B. Recommendation

We recommend that the Service de l'eau ensure that the website is regularly updated with information on the progress of water fountain lead service line screening and replacement as well as with information on the progress made with respect to all aspects of the lead service line replacement Action Plan.

3.5. Accountability

Our audit allowed us to observe that there is no formal and periodic reporting to CC, the executive committee or the borough councils for the two boroughs aimed at informing them of the degree of progress made with respect to all of the activities provided for in the LSLR AP. Also, there is no periodic and formal reporting to the Direction générale of the City. The City does, however, report to the MELCC on the number of LSLs it replaces.

Nevertheless, there is information on LSLRs provided in the budget documents for the City as a whole and those more specific to the boroughs. These documents are available to elected officials, managers and even the general public since they can be found on the City's and boroughs' websites. However, this information is very sketchy and, for example, refers only to the total number of LSLRs for a single year and the total budget allocated for the replacement of LSLs.

In 2013 and 2014, during its review of the *By-law C-1.1 "Règlement sur la canalisation de l'eau potable, des eaux usées et des eaux pluviales"*, the Commission expanded its mandate to include the LSL issue. The SE reported on the LSL issue to the Commission during its work. The Commission's report, filed in 2014, included recommendations regarding, among other things, the progress made with respect to the AP approved in 2007 and to which the City's executive committee provided written responses to the Commission. We did not find any accountability

in subsequent years produced by the SE to formally inform the decision-making bodies of the progress made with respect to all aspects of the LSL replacement AP.

One consequence of the lack of formal and regular reporting to decision-making bodies is that decision-makers do not have access to all of the information they need to make informed decisions regarding the replacement of LSLs.

With regard to reporting on the progress of LSLRs within the SE and the two audited boroughs, managers are informed during informal meetings. Documents are sent and made available to managers regarding LSLRs. Managers are also informed of the replacement of LSLs through decision summaries that they are required to approve. However, in the absence of specific and detailed indicators regarding the implementation of the AP, managers do not have the benefit of detailed and complete reporting on all AP activities. This situation is not conducive to informed decision-making.

3.5.A. Recommendation

We recommend that the Service de l'eau, Côte-des-Neiges-Notre-Dame-de-Grâce and Mercier-Hochelaga-Maisonneuve boroughs to regularly and formally report on the progress made in carrying out the activities of the lead service line replacement Action Plan to promote informed decision-making by policy makers, elected municipal officials, project managers and the public.

4. Conclusion

The lead service line replacement (LSLR) Action Plan (AP) approved by the Québec government in 2007 aims to eliminate the source of lead contamination in drinking water, as lead poses a risk to human health, even at low doses. Lead service lines (LSLs) have been identified as the main source of lead in water on the Montréal territory. These LSLs are part of the water mains that supply drinking water to citizens. In 2019, Health Canada amended its recommended concentration standard, making it even more restrictive. This led the Québec government to react and ask the Ville de Montréal (the City) to develop a revised AP that takes this new, more restrictive standard into consideration. In its revised AP, the City pushed back the timetable for the replacement of all LSLs from 2026 to 2030.

Since 2007, actions have been taken to reduce the public's exposure to lead in drinking water through LSLs, including by:

- screening 39,000 buildings to determine the presence or absence of lead (as of January 24, 2020);
- replacing approximately 21,000 LSLs on the City's territory (as of December 31, 2019);
- making an interactive map available to the public indicating whether or not lead is present in buildings.

We note that the information available on how the replacement of LSLs is managed does not provide an overall picture of the situation to help make informed decisions and to properly inform the public.

We conclude that the replacement of LSLs has not progressed as planned in both the initial (2007) and revised (2009) APs. Given the lack of formal mechanisms and more complete documentation, we conclude that the City does not have the assurance that the municipal by-laws and administrative guidelines regarding the replacement of LSLs have been implemented. Despite the efforts made over these many years, the City will need to review the management practices in place with respect to the AP and multiply its efforts to replace all LSLs on the Montréal territory. To that end, we have made the following recommendations to the City:

- Better define the roles and responsibilities of the various stakeholders involved in lead service line screening and replacement activities and ensure that they are communicated and enforced;
- Revise the LSL replacement AP to ensure that it is updated to include all sectors of activity and new data, the goal being to eliminate all LSLs and to control any risk to the public from lead in drinking water;
- Revise the strategy regarding the replacement of private sections of LSLs to ensure that it includes all aspects so that the most appropriate solutions can be developed;
- Include timetables, targets and indicators for the AP activities to measure results and periodically assess the progress of the implementation of all AP activities so that any necessary adjustments can be made;

- Provide guidance on the data collection, compilation and validation processes related to the screening and replacement of LSLs to ensure the completeness and reliability of the data used to monitor the implementation of the AP;
- Develop documented tracking mechanisms for the by-laws and guidelines to provide the assurance that they are followed;
- Improve the means of communication to inform citizens about the LSLR work and the progress made with respect to all AP activities, in particular the interactive map and the website;
- Improve accountability in order to provide decision-making bodies with a more complete and comprehensive picture of the progress made with respect to all AP activities and thus enable them to make better decisions.

Although the issue of LSLs was raised with the City in 2007 with the first AP and represents a public health concern, eliminating all LSLs from the Montréal territory remains a major challenge for the City, with close to 140,000 buildings still to be screened for LSLs, approximately 48,000 LSLs to be replaced and approximately 21,000 private sections of service lines to be analyzed following the replacement of their public sections by the City

5. Appendices

5.1. Objective and Evaluation Criteria

Objective

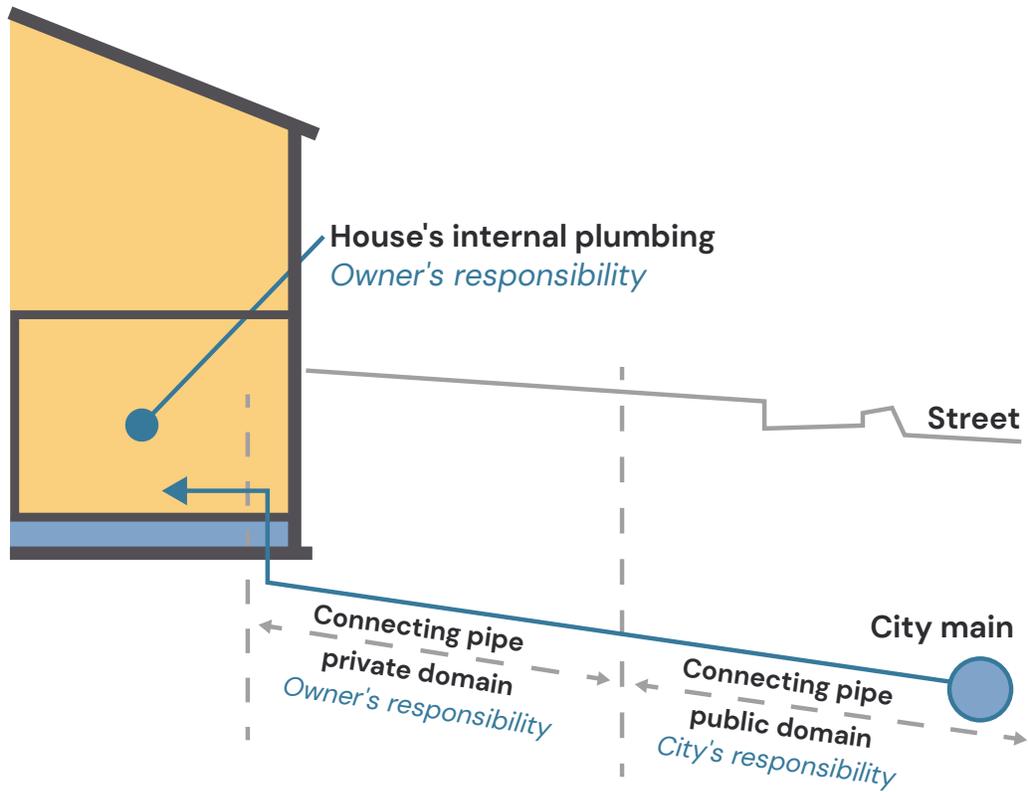
To ensure that the implementation of lead service line replacements is progressing in accordance with the 2007 Action Plan that was revised in 2019 and that the municipal by-laws regarding replacement work are being enforced as intended.

Evaluation Criteria

- The roles and responsibilities of the stakeholders involved are clearly defined, well communicated and properly applied.
- The Action Plan for the replacement of lead service lines is being implemented as planned, includes specific timetables and is supported by a reliably kept inventory.
- The *Règlement relatif au remplacement par la Ville de la section privée des entrées de service d'eau en plomb (By-law 17-078)* is correctly applied and the Ville de Montréal collects the amounts owed to it by the owners concerned.
- The boroughs replace service lines as part of their local *Programme de réfection routière*, as provided for in the *Règlement intérieur de la Ville sur la délégation de pouvoirs du conseil de la Ville aux conseils d'arrondissement (By-law 02-002)*.
- Effective and up-to-date communications are in place to inform citizens of the status of service line replacements and the risks to which they are exposed.
- Regular monitoring and reporting mechanisms are in place to report on progress and to inform decision-makers.

5.2. Illustration of a Service Line (Public and Private Sections)

Connecting the House to the Water System



Source: Ville de Montréal, Service de l'eau, website (section on lead and drinking water – 2020–2030 Action Plan)



3.5.

Management of Rolling Stock Maintenance (Excluding Public Safety Vehicles)

April 27, 2021

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

Management of Rolling Stock Maintenance (Excluding Public Safety Vehicles)

Background

The delivery of a multitude of services to citizens by the business units (clients of the Service du matériel roulant et des ateliers (SMRA)) depends on the availability of a vehicle fleet in good working condition. Managing the maintenance of the Ville de Montréal's (the City's) 8,200 vehicles and equipment is spread out among 27 mechanical workshops whose operating budget is more than \$60M annually out of a total budget of approximately \$110M. In 2017, these activities were grouped under the SMRA. The operations are supported by the Gestion de la maintenance assistée par ordinateur (GMAO) system, which includes data on vehicles, planning and implementation of interventions. The City operates heavy vehicles (HVs) (17% of the fleet), which are subject to regulatory provisions governing HVs owners, operators and drivers. The regulation involves the business units for the circle check (CC) prior to the use of the HVs, and the SMRA for the application of the Preventative Maintenance Program inspections (PMP inspections) recognized by the Société de l'assurance automobile du Québec (SAAQ) and the repair of defects. The Service de l'approvisionnement (SA) is responsible for ensuring the availability of the parts and materials required for the maintenance activities of the SMRA's workshops.

Purpose of the Audit

To ensure that the management of vehicle and equipment maintenance is adequately planned, performed and followed up to enable the business units to deliver their services as planned, and that there is appropriate cost control.

Results

The management of the SMRA's rolling stock maintenance has several shortcomings, especially at the level of the comprehensiveness of the information on the vehicles, the consistency of preventative maintenance planning, which is behind schedule, and the documentation of interventions and associated costs. Planned interventions do not reflect all the operational requirements of the business units and are not adjusted according to the capacity of the workshops. The SMRA's operations are not aligned with those of the SA to ensure the timely availability of the products required for the interventions. The control mechanisms and management reports required to track implementation of the interventions and monitor compliance with the regulation are not available. The implementation of PMP inspections and corrective maintenance on the HVs, as well as the CCs performed by the drivers in the boroughs, contain failures to comply with the applicable regulation. The tracking of costs and the performance evaluation of the management of rolling stock maintenance are flawed due to a lack of reliable data, objectives and indicators. Annual accountability fails to mention the operational management of the workshops or the regulatory compliance of the HVs. Almost four years after the centralization of these activities, no follow-up has been done of the objectives to be achieved.

Main Findings

Roles and Responsibilities

- The City is not compliant with the regulatory provisions governing HV owners, operators and drivers regarding CCs, which are not systematically performed and properly documented by the drivers.

Data Sheets and Intervention History

- The data contained in the vehicles' data sheets is not exhaustive, nor is the intervention history, which is not properly documented in the GMAO system.

Inventory and Availability of Parts and Supplies

- There is no assurance of the timely availability of parts for repair and maintenance work by the workshops because of a lack of alignment between the SMRA and the SA, leading to reactive procurement.

Planning of Maintenance Activities

- Procedures and work methods are not in place to promote consistent and effective maintenance management across all workshops.
- Interventions for the same type of vehicle are not programmed consistently or according to the manufacturers' recommendations, and the corresponding maintenance records are not systematically kept.
- Planning of the interventions does not take into consideration the workshops' capacity and is not aligned with the operational needs of the business units.

Implementation of Maintenance Activities

- No coordination mechanisms exist between the SMRA and the business units for the requisition of vehicles and for monitoring their out-of-service periods in the workshops.
- Follow-up of preventative maintenance and compliance of PMP inspections is inadequate. Preventative maintenance is delayed, while not all PMP inspections comply with the regulatory provisions.

Data, Management Analyses and Accountability

- The data on interventions and related costs lack completeness and reliability, while objectives and indicators are not established, thus preventing the performance evaluation of and accountability for the maintenance management.
- The intended objectives of the centralization of the SMRA's activities have not been subject to any accountability.

In addition to these results, we have made various recommendations to the business units, which are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms

BVG	Bureau du vérificateur général	PMP inspections	Preventative Maintenance Program inspections
CC	circle check	SA	Service de l'approvisionnement
GMAO	Gestion de la maintenance assistée par ordinateur	SAAQ	Société de l'assurance automobile du Québec
GVWR	gross vehicle weight rating	SIMON	Système intégré Montréal
HV	heavy vehicle	SMRA	Société de l'assurance automobile du Québec
kg	kilogram	SPOID	Section planification opérationnelle et intégrité des données
km	kilometre	VCR	vehicle condition report
MEDA	motorized equipment distribution agent	WO	work order
MIR	Maintenance, Inspection, Repair		
ODHV Act	<i>Act respecting owners, operators and drivers of heavy vehicles</i>		



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1. Background

The Ville de Montréal (the “City”) owns a fleet of nearly 8,200¹ vehicles and equipment, grouped into 7 categories² and 305 different classes. For example, “Category A – Light automobiles” comprises several classes, including four-door sub-compact cars (class 134), while “Category C – Heavy trucks” comprises sewer cleaning trucks (class 309) and dump trucks (class 293).

The performance and availability of the vehicle fleet operated by the City are important factors for the delivery of many services to citizens, including snow removal, roadworks, and infrastructure, building, and park maintenance, to name just a few.

As an owner, the City is responsible for periodically maintaining all the vehicles and equipment to ensure their good working condition during their useful lifetime and limiting breakdowns that require repairs or out-of-service periods.

In addition, as an owner and operator of heavy vehicles³ (HVs) that represent approximately 17% (1,357) of the vehicle fleet, the City is obliged to comply with various legal provisions:

- the *Act respecting owners, operators and drivers of heavy vehicles*⁴ (ODHV Act);
- the *Highway Safety Code* (chapter C-24.2);
- the *Regulation respecting safety standards for road vehicles* (C-24.2, r. 32).

¹ As of January 25, 2021.

² See Appendix 5.2. “Picture of the fleet of vehicles and equipment by category, at January 25, 2021.”

³ HV: a road vehicle whose GVWR is 4,500 kilograms (kg) or more, a combination of road vehicles whose total GVWR is 4 500 kg or more, a bus, minibus or tow truck, as well as a vehicle that transports dangerous substances as described in section 622 of the *Highway Safety Code*.

⁴ “This Act establishes special rules applicable to owners, operators and drivers of heavy vehicles with a view to increasing the safety of road users on roads open to public vehicular traffic and to preserving the integrity of those roads.”

The right to put into circulation or to operate an HV is a privilege granted to vehicle owners and operators,⁵ entered in the register of the Commission des transports du Québec (the Commission). This privilege comes with obligations to comply with regulatory provisions, which, in the case of the City, are to:

- ensure that circle checks (CCs)⁶ are done by drivers before using HVs;
- maintain HVs in good mechanical condition and comply with the maintenance standards and the frequency and verification procedures established by the Preventative Maintenance Program inspections (PMP inspections) of the Société de l'assurance automobile du Québec (SAAQ);
- repair defects identified;
- comply with the maintenance programs;
- preserve the documents needed for the vehicle record;
- submit its vehicles to periodic PMP inspections.

To meet the requirements of the ODHV Act, the SAAQ developed the Conduct Review Policy for Heavy Vehicle Owners and Operators. Failure to comply with the obligations contained in this policy can lead to the downgrading of the safety rating⁷ of HV owners and operators. Ultimately, an “unsatisfactory” safety rating can result in a ban on putting an HV into circulation or operation. Following several critical incidents of overloading HVs, the City was summoned by the Commission, in November 2019, to evaluate whether the shortcomings that it was accused of affected its right to put HVs into circulation or operation. The City’s safety rating was maintained at “satisfactory.”

In addition to the repair of vehicle defects as needed, maintaining the vehicles in good working condition requires implementing a Maintenance Program for all vehicles and a regulated PMP Inspection Program for HVs that are subject to the Highway Safety Code. These programs help identify potential vehicle failures and maintain the vehicles in good working condition. The City is an agent authorized by the SAAQ to act on its behalf to carry out the maintenance program of its own HV fleet.

The City also uses seasonal vehicles and equipment (e.g., sidewalk plows, street sweepers, detachable snowblowers) to meet specific needs during target periods. To ensure the boroughs’ seasonal operations, these vehicles and equipment must be ready and functional prior to the start of the season’s activities. Some of these vehicles are used year-round, in both summer and winter but for different

⁵ Owners of HVs are the persons whose names appear on the vehicles’ registration certificates issued in Québec and those who hold a right to this vehicle under the *Highway Safety Code*. Operators of HVs are persons who control the operation of an HV.

⁶ The CC consists of a visual and auditory verification of certain accessible elements of an HV, which enables the driver to ensure that the vehicle is safe before using it. The main objective of the CC is to improve the safety of all road users.

⁷ The SAAQ prepares a file on all HV owners and operators. It identifies those whose behaviour is exemplary and those whose behaviour presents a risk and submits its proposal for changing safety ratings accordingly to the Commission. The three possible ratings are: “satisfactory,” “conditional” and “unsatisfactory.”

operations, thus requiring seasonal conversion. For example, the open-box bed of a dump truck is replaced with a spreader, and the snow modules of multifunctional equipment are removed and replaced with summer modules, such as mowers.

To support its vehicle maintenance management, the City operates a Gestion de la maintenance assistée par ordinateur (GMAO) system, titled Maintenance, Inspection, Repair (MIR),⁸ which centralizes the information needed to manage vehicle servicing, such as the vehicle identification information, technical information, warranties, maintenance programs and intervention histories.

1.1. Stakeholders Involved and Responsibilities

Within the City, the management of rolling stock maintenance involves the Service du matériel roulant et des ateliers (SMRA), the Service de l'approvisionnement (SA), and the business units and boroughs that use these vehicles and equipment (clients).

Service du matériel roulant et des ateliers

The City's *By-law concerning departments*⁹ states that the SMRA is "responsible for the purchase and rental of rolling stock and the service offer to repair and maintain heavy and light vehicles and to repair and manufacture general goods and equipment."¹⁰

Prior to January 1, 2017, the rolling stock for the nine boroughs of the former Ville de Montréal¹¹ and central departments was managed by the SMRA, while the 10 former suburban municipalities¹² provided autonomous local management. Beginning on January 1, 2017, city council assumed jurisdiction,¹³ under section 85.5 of the *Charter of Ville de Montréal*, of the powers related to the rolling stock (e.g., purchase, rental, maintenance and management of the rolling stock, except for short-term rentals) for an initial period of two years, and then up to the end of 2021. City council must decide again on extending this jurisdiction beyond 2021.

⁸ MIR is a commercial software developed to manage the maintenance of a vehicle fleet. This software contains data on the maintenance and use of the City's active vehicles, as well as the regular record of mileage and maintenance costs.

⁹ *By-law concerning departments 14-012*, section 1, paragraph 18 (adopted March 24, 2014 by city council).

¹⁰ The SMRA produces various goods and equipment for the City's business units, for example the manufacture and repair of urban furniture, signage and water system parts, as well as the interior design of specialized vehicles.

¹¹ Ahuntsic-Cartierville, Côte-des-Neiges-Notre-Dame-de-Grâce, Mercier-Hochelaga-Maisonneuve, Plateau-Mont-Royal, Rivière-des-Prairies-Pointe-aux-Trembles, Rosemont-La Petite-Patrie, Sud-Ouest, Villeray-Saint-Michel-Parc-Extension, and Ville-Marie.

¹² Anjou, L'Île-Bizard-Sainte-Geneviève, LaSalle, Montréal-Nord, Outremont, Pierrefond-Roxboro, Saint-Laurent, Saint-Léonard, and Verdun.

¹³ City council resolution (CM16 1267), November 22, 2016.

Under this new organizational model, the SMRA became responsible for the rolling stock of the City's entire vehicle fleet, which concern the following functions:

- Vehicle and equipment purchase, maintenance and management;
- Management of all mechanical workshops on its territory;
- Operator training;
- Fuel management.

The SMRA has become a major player in the management of the vehicle fleet. Its mission is:

[TRANSLATION] (...) [to ensure] the availability and reliability of the vehicles and various specialized products and services, adapted to the needs of the boroughs and units, in an environmentally responsible way and in a safe workplace.¹⁴

Various units of the SMRA contribute to providing vehicle maintenance and repair services, including the:

- Direction des ateliers mécaniques et de proximité, which is responsible for the maintenance and repair activities performed in the 27 mechanical workshops spread out among the five divisions (east, west, north, south and public safety), as well as those activities performed externally;
- Section planification opérationnelle et intégrité des données (SPOID) within the Division planification et soutien aux opérations, which is responsible for supporting the operations of the various branches of the SMRA, including controlling the integrity of the vehicle fleet data (e.g., vehicles put into service, management of active vehicles, planning support, and retirement). Among the SPOID analysts, five are dedicated to directly supporting the operations of the 27 mechanical workshops.

The SMRA's operating budget for the years 2018, 2019 and 2020 was \$109M, \$112M and \$106M, respectively. The portion allocated to the Direction des ateliers mécaniques et de proximité was approximately \$66M, \$69M and \$64M, or more than 60% of its total budget, for the same years for maintenance and repair activities.

¹⁴ Source: City's Intranet. Mission and priority actions of the SMRA for the year 2020.

Service de l'approvisionnement

The Division opération logistique, within the SA, is responsible for managing inventories and for providing access to and distributing the goods required by the City's business units to deliver their services to citizens. Across the 24 service points,¹⁵ a team of stock-keepers, commonly called motorized equipment distribution agents (MEDAs), manage the inventories, provide over-the-counter services and purchase the parts and equipment needed for the activities of the SMRA's workshops.

Business Units (clients of the Service du matériel roulant et des ateliers)

As vehicle fleet users, the business units must ensure the safe and responsible operation of the vehicles to limit abnormal breakdowns and out-of-service periods. Specifically, in the case of HVs that are subject to the ODHV Act, the business units must ensure that their drivers perform a CC before using the vehicles and report any defect to the SMRA so that repairs can be made within the prescribed timelines.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act (CTA)*, we completed a performance audit mission on the "*Management of Rolling Stock Maintenance.*" We performed this mission in accordance with the *Canadian Standard on Assurance Engagement (CSAE) 3001*, described in the *CPA Canada Handbook - Certification*.

The purpose of this audit was to ensure that vehicle and equipment maintenance activities were properly planned, performed and followed up so that business units were able to deliver their services as scheduled, and that there was appropriate control of costs.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control (CSQC) 1* from the *CPA Canada Handbook - Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles

¹⁵ The 24 service points serving the SMRA include 10 stores and 14 warehouses. Among the targeted workshops, those of Montréal-Nord and Saint-Laurent have a parts store where stock movements are controlled by a MEDA. Plateau-Mont-Royal and Sud-Ouest workshops have a storage location, called a warehouse, where mechanics can freely obtain supplies and where inventory is restocked regularly by a MEDA.

of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit focused on the period from January 1, 2018, to May 31, 2020. However, for some aspects, we also considered earlier and later data. These consisted mainly of work done between May 2020 and February 2021. We also took into consideration information that was sent to us up to April 2021. In addition, we excluded the vehicles of the Service de police de la Ville de Montréal and those of the Service de sécurité incendie de Montréal from the scope of our audit.

This audit focused on the following business units:

- Service du matériel roulant et des ateliers;¹⁶
- Service de l'approvisionnement;
- Montréal-Nord borough;
- Plateau-Mont-Royal borough;
- Saint-Laurent borough;
- Sud-Ouest borough.

Upon completing our audit, we submitted a draft audit report to the relevant managers in each of the audited business units for discussion purposes. The final report was then forwarded to the management of each of the business units involved to obtain an action plan and timeline for implementing the recommendations concerning them, as well as to the Direction générale. A copy of the final report was also sent to the acting deputy director-general of the Services institutionnels, the deputy director-general of the Service aux citoyens, the director of the Service de concertation des arrondissements and, for information purposes, to the directors of the boroughs not directly audited to enable them to implement the recommendations where the situation warrants it.

3. Audit Results

To improve the City's performance and offer citizens the best services possible at the best price, the SMRA must have the required number of vehicles available, in good condition and complying with the regulation on HVs, at the time planned for the operations.

Vehicles are subject to unforeseen breakdowns. But by implementing timely preventative maintenance and inspection programs, it is possible to take action and correct the source of potential vehicle failures and, consequently, reduce the number of chance breakdowns that could compromise the City's operations. This

¹⁶ Of the 27 mechanical workshops under the Direction des ateliers mécaniques et de proximité, according to the organizational chart dated October 2020, we concentrated our audit on those of Montréal-Nord, Plateau-Mont-Royal, Saint-Laurent and Sud-Ouest.

requires proper planning and organization of the work, as well as coordination with the procurement functions so that the required products are available at the time scheduled for the work. To achieve this, stakeholders must rely on all the information and tools, such as the vehicles' technical specifications, applicable warranties and maintenance records that ensure adequate, effective and consistent management of the planned interventions. The repair history is another useful information tool to consider in promoting efficient and effective interventions.

3.1. Maintenance Planning

The performance and availability of the rolling stock operated by the City requires having relevant data to support the work (e.g., preventative maintenance, corrections and inspections) and aligning all the work required on the vehicles with the stakeholders concerned (the SMRA, the SA and the business units).

3.1.1. Inventory and Data Sheets

Vehicle Inventory

To ensure proper management of the City's entire fleet, it is vital that all active vehicles be integrated into the MIR software. The audit performed by the Bureau du vérificateur général (BVG) in 2020¹⁷ found that the inventory of vehicles and equipment in the various databases used by the SMRA, including Invflot,¹⁸ MIR and Temp Diff,¹⁹ was inconsistent across the systems and did not match the inventory actually in the field. This was still the case at the time of our audit.

Vehicle Data Sheets

Supporting vehicle maintenance management requires that the data on the vehicles' identification, technical references and applicable warranties be available in their respective files in the MIR system. This information, usually entered when a vehicle is put into service after its purchase, is accessible to users (at the workshops) to consult throughout the vehicle's useful life.

¹⁷ Audit report of the BVG on the "Management of Rolling Stock," dated March 5, 2020.

¹⁸ Invflot is a database that includes the inventory of the City's active and inactive vehicles, including the serial number, make, model and date of receipt of a vehicle by the SMRA, as well as the date it was put into service.

¹⁹ Temp Diff is a software that allows mechanics to enter the time worked on servicing each vehicle. Once the entered data is validated by the workshop manager, it is transferred into the corresponding work order (WO) in the MIR system.

Information regarding vehicle identification

The identifying information associated with a vehicle includes the make and model, serial number and gross vehicle weight rating (GVWR). In the case of the workshops targeted by this audit, this basic information was largely present in the vehicle files:

- The vehicle identification number was available for 96% of the vehicles;
- The date of entry into service was available for 96% of the vehicles;
- The make and model were entered for 99% of the vehicles.

Nevertheless, the GVWR was only present for 45.6% of vehicles, which does not ensure that the regulatory inspections are performed on all HVs.

Information regarding vehicle technical references

Technical information refers to the vehicle's various groups of components. For example, in the case of brakes, this can be information on the brand and model of the components used, sizes of the discs, drums and lining. In the case of the engine, it might include the serial number or quantity and type of oil required for an oil change.

Technical specifications are the basic information required to service a vehicle in the workshop. This data must be available to facilitate work done by the mechanics and procurement of the required parts and equipment. In the absence of technical specifications, those involved must refer to the manufacturer's manual, search the Internet or contact the manufacturer directly for each intervention on the vehicle. The stakeholders we met pointed out major shortcomings in the comprehensiveness of the data on vehicle parts and various components in MIR, which represents a source of inefficiency in maintenance management in the workshops on several levels.

A review of the vehicle files examined during our audit corroborated this inconsistency and incompleteness raised by the stakeholders we met.

To compensate for the absence of technical data, two of the mechanical workshops we targeted (Montréal-Nord and Saint-Laurent) put in place parallel inventory systems for the main parts and components required to maintain their vehicles. While the objective is commendable, such systems constitute a proliferation of non-integrated data sources. It would be more efficient if this information were centralized and easily accessible.

In summary, the information on the SMRA's vehicles is neither exhaustive nor easily accessible. Sound industry practice is for the GMAO system to be supplied with a complete source of data (e.g., identifying data, technical specifications, maintenance points) obtained from the manufacturer. These measures should be implemented to remedy the situation, promote efficient maintenance management and facilitate alignment with the SA.

Information regarding vehicle warranties

Information about warranties can be entered in a vehicle's file so that workshops can refer to it in the event of a repair or replacement of components, and to file claims where applicable. There are several types of warranties, including basic warranties²⁰ and warranties on groups of components,²¹ which come with the vehicle, extended warranties²² and warranties on parts replaced during work done in the workshop (e.g., three-year warranty on XYZ brand alternator).

We set out to evaluate the completeness of the information on warranties associated with the vehicles and parts. From the data in MIR, it was impossible to identify the types of warranties. We chose instead an overall analysis of the presence of data on the warranties available per vehicle.

Information on warranties in MIR is not comprehensive because data has only been entered for 516 of SMRA's 3,497 vehicles in service (14.8%) since 2015 (see Table 1). Since the centralization on January 1, 2017, information on basic warranties and warranties on groups of components was recorded for only 193 of the 2,116 new vehicles put into service (9%).

TABLE 1

Percentage of Vehicles Put into Service Between 2015 and 2020 Whose Warranty Data was Available in the Maintenance, Inspection, Repair System

Year put into service	Vehicles put in service	Number of vehicles with warranty data by type of warranty				
		Both types of warranties	Warranty on the group of components	Basic warranty	Total	
					Vehicles	%
2015	678	58	5	115	178	26.3%
2016	703	58		87	145	20.6%
2017	692	70	1	108	179	25.9%
2018	607	3		10	13	2.1%
2019	536				0	0.0%
2020	281			1	1	0.4%
Total	3,497	189	6	321	516	14.8%

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

²⁰ Basic warranties: correspond to general coverage of a vehicle (e.g., 3 years or 60,000 kilometres (km), whichever occurs first).

²¹ Warranties on groups of components: these warranties take precedence over the general warranty since coverage is for the vehicle's separate components. These warranties differ for each group of components (e.g., bodywork, 5 years, unlimited mileage based on whichever occurs first; engine, 40,000 km).

²² Extended warranties: in addition to warranties on groups of components, an organization may decide to defray additional costs to extend the warranty on one or several components (e.g., powertrain).

As with technical data, a vehicle's warranty manual can be accessed from the SMRA's public directory. This is not the case, however, for all vehicles.

In addition, while a GMAO system allows notification when a vehicle or component is still under warranty, this function is not fully used by the SMRA.

Extended warranties are not part of the City's practices. In exceptional cases, they may be acquired for certain types of equipment, but they are not reflected in MIR.

All these limitations result in increased effort required for workers in the workshops to track, identify and determine whether warranties are still in effect at the time a given vehicle is serviced. This situation carries the risk that claims will not be filed and, consequently, that repair costs that might have been covered under the various warranties are assumed entirely by the City.

There are no warranties on parts in MIR. Consequently, when servicing a vehicle, the workshop staff must make a request to the SA to search for the specific part in the purchase history to determine whether it is under warranty and, if need be, contact the supplier to make a claim. The number of warranty claims on parts depends, therefore, on the memory of each stakeholder when the failure of a specific part is detected. Given the size of the vehicle fleet and the number of interventions performed daily, the persons in charge of the workshops affirm that claims on warranties for parts are not done systematically.

The fact that the information required to manage warranties that apply to vehicles is incomplete and not easily accessible, coupled with a voluntary verification process that is not user-friendly to determine which parts are under warranty, carries the risk that claims will not be filed by the workshops, resulting in a potential monetary impact on the City.

Picture of warranty claims

Using MIR, we set out to draw a picture of the warranty claims for the period from January 1, 2018, to December 31, 2020. The report that was generated did not include any data. No warranty claim was documented for basic, extended or parts warranties. It should be noted, however, that although there was no documentation on warranties in the MIR software and the number of claims could not be estimated, several repairs were performed under warranty without necessarily being documented. Nevertheless, all stakeholders stated that this represented a shortfall for the City that could not be estimated.

3.1.1.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers ensure control of the completeness and accuracy of the identifying, technical and warranty data of the City's entire fleet of vehicles and equipment in the Gestion de la maintenance assistée par ordinateur system, to promote efficient workshop interventions, management of applicable warranties, and alignment with the Service de l'approvisionnement.

3.1.2. Programming Maintenance and Inspections

Maintenance and inspection programs for the rolling stock require planning adapted to the vehicle types. They must be programmed in MIR prior to the vehicles being put into service, in accordance with the frequencies suggested by the manufacturers and the inspections required under the ODHV Act for HVs, within a PMP inspections.

These programs integrate 153 tasks to be performed, called maintenance points, based on the vehicle type and use.²³ The frequency of maintenance points recommended by the manufacturers can be adapted to take into account the specific needs of the City regarding the type of use of the vehicles for its operations, such as adapted farm tractors used for snow removal and salt spreading. The parameters that trigger the different maintenance points are:

- The number of days reached;
- The vehicle's odometer (km travelled);
- The vehicle's number of mechanical hours (engine hours);
- The amount of fuel used by the vehicle;
- A specific day on the annual calendar.

Preventative Maintenance Program

Programming preventative maintenance

The expectation is that the programmed maintenance points will be similar for vehicles of the same class and, at a minimum, reflect the manufacturers' recommendations, and that maintenance reports detailing the tasks to be performed for each of the programmed points will be available to the mechanical workshops to ensure compliance and consistency in performing the preventative maintenance.

Yet the SMRA has no mechanism to ensure that all vehicles and equipment are programmed for preventative maintenance and no consistent triggers for the same type of vehicle (e.g., identical make and model). This situation fails to ensure control of maintenance planning for the City's vehicles and equipment.

In addition, the maintenance points for similar vehicles (of the same class) are not programmed consistently (see Table 2). For example, in the case of *class 293 – Dump trucks*, there are an average of 2.2 programmed maintenance points per vehicle at Plateau–Mont–Royal workshop compared with 6 at the Montréal–Nord workshop. As well, in the case of essential snow removal equipment, *class 825 – Loader with snowblower*, there are an average of 2.6 maintenance points per vehicle at Sud–Ouest workshop and more than double that number (5.5) at the Montréal–Nord workshop.

²³ For example, code 1 for an oil change, engine filter change and lubrication, code 2 for inspection by the SAAQ, and code 83 for an annual tune-up.

TABLE 2

Average of Programmed Maintenance Points by Vehicle Class for the Targeted Workshops

Vehicle class examined	Average number of maintenance points for the targeted workshops					
	Number of vehicles	Montréal-Nord	Plateau-Mont-Royal	Saint-Laurent	Sud-Ouest	Total
Class 140 – Electric compact car	27	1.7	1.1	1.0	2.0	1.4
Class 212 – Pickup truck with crew cab	60	2.9	4.3	3.7	4.4	3.8
Class 293 – Dump truck	15	6.0	2.2	3.7	4.0	3.6
Class 513 – track tractor	48	3.3	3.0	4.5	4.5	4.0
Class 825 – Loader with snowblower	21	5.5	5.2	5.0	2.6	4.6

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

A comparative analysis of 21 class 825 snowblowers showed the disparity in programmed maintenance points (see Table 3). We also found that no snowblower had been programmed for all 19 maintenance points associated with this vehicle class.

TABLE 3

Comparative Maintenance Points of Class 825 Vehicles – Loader with Snowblower

Maintenance point	Number of snowblowers tracked by maintenance point, per targeted workshop			
	Montréal-Nord	Plateau-Mont-Royal	Saint-Laurent	Sud-Ouest
Number of vehicles	4	6	6	5
Number of different maintenance points	12	16	12	4
1 Oil and engine filter change and lubrication			4	
2 Lubrication only			4	
3 Inspection at 10 hours		1		
4 Inspection at 100 hours	1	1	2	
5 Inspection at 1,000 hours	1	1	2	
6 Inspection at 2,000 hours	1	1	2	
7 Inspection at 300 hours	1	1	2	
8 Inspection at 50 hours	1	1	2	
9 Inspection at 500 hours	1	1	2	
10 Inspection at 5,000 hours	1	1	2	
11 Inspection at 6,500 hours	1	1	2	
12 Annual inspection (seasonal)	4	5	4	5
13 Intermediate inspection	3	4		2
14 Post-storm inspection	4	5		5
15 Inspection at the first 12 hours only		1		
16 Inspection at the first 25 hours only		1		

Maintenance point	Number of snowblowers tracked by maintenance point, per targeted workshop			
	Montréal-Nord	Plateau-Mont-Royal	Saint-Laurent	Sud-Ouest
17 Inspection at the first 50 hours only		1		
18 Regular inspection (without oil or filter change)	3	5		1
19 Annual tune-up			2	
Vehicles with all maintenance points	0	0	0	0

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

In addition, a comparative analysis of 11 snowblowers of the same make and model²⁴ showed that the types of maintenance were not programmed consistently within the SMRA. The main discrepancies identified were as follows:

- The snowblowers acquired in 2020 were inspected at the first 12, 25 and 50 hours of use, whereas those purchased in 2019 were not;
- Those acquired in 2012 and 2013 were not inspected after established blocks of user time, as were those purchased in 2019 and 2020;
- Additional maintenance points, such as “post-storm inspection,” were only programmed for snowblowers acquired before 2020.

While greater effort was made to orient the maintenance programs with the manufacturers’ recommendations for snowblowers acquired since 2019, it should be noted that the manuals we examined carried a warning that non-compliance with maintenance procedures could affect the warranty.

In short, the difference between programmed maintenance points for the same equipment and the deviation found from the manufacturer’s recommendations fail to provide assurance of consistent and compliant management of the entire vehicle fleet. Programmed maintenance of the vehicles should at least reflect the minimum frequencies recommended by the manufacturers.

A similar comparison of the maintenance points for two other classes of vehicles (140 – *Electric compact car* and 293 – *Dump truck*) could not be done as part of this audit because the SMRA did not have the manufacturers’ manuals required to verify whether the programmed points corresponded to their recommendations. A manufacturer’s maintenance manual is among the reference tools that should normally be available to those involved in managing vehicle maintenance.

²⁴ Larue snowblower, model D65, purchased in 2012, 2013, 2019 and 2020.

Maintenance records

Each of the programmed maintenance points includes various tasks that must be performed. For example, the “inspection at 50 hours” maintenance point requires an oil change, filter replacement and inspection for leaks. These tasks must be described in detail in a maintenance record so that mechanics can perform them in a consistent and compliant way in all workshops.

For the vehicle classes examined (140, 293 and 825), the findings regarding the presence and correspondence of planned tasks in the maintenance records were as follows:

- Class 140 – *Electric compact car*: The maintenance record available to the workshops was a generic record for light vehicles that did not indicate tasks specific to electric cars;
- Class 293 – *Dump truck*: No maintenance record was produced by the SMRA for the programmed points for these vehicles;
- Class 825 – *Loader with snowblower*: records were only available for certain maintenance points and did not systematically contain all the tasks recommended by the manufacturer.

The absence of maintenance records or records where tasks do not reflect the manufacturer’s requirements result in maintenance not being performed on similar vehicles in a consistent and compliant way between workshops. As well, given that not all the manufacturers’ maintenance manuals are available to the workshops as an alternative reference source, managing proper preventative maintenance for such a diversified vehicle fleet is made more complex.

Parameters that trigger preventative maintenance points

In the case of the parameters that trigger programmed preventative maintenance points, the SMRA was unable to show that the frequencies recommended by the manufacturers were being followed or that they were consistently programmed for the same type of vehicle in all workshops.

This aspect of planning, which falls under the remit of the SPOID analysts, seems to be inconsistent, resulting in maintenance that is not standardized across all workshops.

Given the discrepancy between the inventory of the City’s vehicles in the Invflot and MIR systems, there is also a risk that vehicles that do not appear in MIR are not programmed for preventative maintenance.

PMP Inspections

As the owner and operator of HVs, the City obtained recognition for its Preventative Maintenance Program, which consists of planned PMP inspections based on the minimum standards of the regulation, to serve as a substitute for the periodic mechanical verifications required by the SAAQ. To be compliant, these PMP inspections must be performed a minimum of twice annually (or every six months) for HVs travelling less than 20,000 km/year and at least four times annually (or every three months) for vehicles travelling more than 20,000 km/year.

To assess whether the programmed PMP inspections for two maintenance points on HVs had been performed, we analyzed a data extraction for HVs in service between January 1, 2018, and February 28, 2020, for the four targeted workshops.

TABLE 4

Comparative Inventory of Active Heavy Vehicles (Gross Vehicle Weight Rating > 4,500 Kilograms) During the Period of January 1, 2018, to February 28, 2020, that had Programmed PMP Inspections

Targeted workshops	Heavy vehicles (potential based on criteria) in Invflot	Heavy vehicles with PMP inspections in MIR	Difference
Montréal-Nord	50	47	3
Plateau-Mont-Royal	71	70	1
Saint-Laurent	91	83	8
Sud-Ouest	64	64	0
Total	276	264	12

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

In the case of the 276 HVs identified in Invflot, 264 HVs had programmed PMP inspections in MIR for the given period. The stated difference (12) can be explained by vehicle data entry errors (e.g., misidentified vehicle weight (5) or category (7)). Thus, all the HVs in the four targeted workshops for the given period had, in fact, been properly programmed for PMP inspections.

Nevertheless, the differences identified (12/276, representing 4.3%) fail to provide assurance that all the data was properly entered. Given these discrepancies and those identified between the Invflot and MIR systems, other differences may exist, which fails to provide assurance that all the City's HVs undergo PMP inspections as required by the ODHV Act.

Regarding compliance with the frequency of PMP inspections, the SMRA was unable to show that their parameters for triggering these inspections were properly programmed, i.e., at a frequency of two or four times annually based on the yearly mileage travelled by the HVs.

Given the minimum frequency requirements of PMP inspections, the expectation is that these frequencies will be consistent for all HVs. Under the circumstances, in addition to ensuring that PMP inspections are planned and performed on all HVs, the SMRA must also ensure that they comply with the legal provisions regarding their minimum frequencies.

Because of the regulatory provisions, a tracking mechanism to ensure that all the City's HVs undergo a PMP inspection is necessary and would have made this verification possible, but it was not put in place by the SMRA. We believe that management reports that help monitor the planning and implementation of PMP inspections should be established.

In summary, the shortcomings identified in the planning of maintenance and inspections have a significant impact on the proper functioning and compliance of vehicles. This can result in premature breakdowns and reduce the ability of business units to provide services. Conversely, maintenance and inspections performed more often than necessary increase expenditures without adding any real value for the City. To ensure that vehicles are in good working condition and to maximize their availability, measures must be put in place so that all vehicles undergo appropriate preventative maintenance in a timely manner. Furthermore, HVs must undergo PMP inspections based on the frequencies required by the regulation.

3.1.2.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place mechanisms to ensure that its entire fleet of vehicles is subject to a Preventative Maintenance Program at an appropriate frequency, based on maintenance records that minimally meet the manufacturer's requirements, to ensure consistent management of vehicles by the workshops.

3.1.2.B. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place mechanisms to ensure that all heavy vehicles are subject to Preventative Maintenance Program inspections and that the planned frequencies meet the applicable legal provisions.

3.1.3. Maintenance Schedule and Capacity Management

Maintenance Schedule

Vehicle maintenance management involves several types of intervention, including preventative maintenance and inspections that are planned and must be entered ahead of time in a work schedule. Unforeseen repairs required as a result of vehicle or equipment breakdowns are added to these.

Planning preventative maintenance and PMP inspection programs is the responsibility of the SPOID team of analysts. The persons in charge of the workshops (e.g., workshop managers or foremen), for their part, plan and coordinate vehicle servicing at the workshops on a daily or weekly basis, depending on the schedules established by SPOID and on unforeseen breakdowns that require corrective actions.

The SPOID analysts send lists of vehicles due for preventative maintenance or PMP inspections to the boroughs and the workshops that serve them. These lists are generated from the MIR system, based on parameters that trigger the planned maintenance and inspection points for these vehicles.

The preparatory work on seasonal vehicles and the conversion of all-season vehicles, however, are not integrated into this planning. Instead, they appear in a parallel file, which results in a proliferation of schedules and non-integrated follow-up for the same workshop. Seasonal interventions are in addition to preventative maintenance and must, therefore, be integrated and planned in the same schedule to promote the coordinated management of all interventions at a given workshop and facilitate their prioritization and follow-up.

Although there is some communication regarding maintenance planning, shortcomings were identified based on the capacity of the workshops and the alignment of the planning with clients' needs.

Adjusted Planning based on Workshop Capacity

While our audit did not involve an in-depth evaluation of the capacity of the workshops, a discrepancy was observed between the number of vehicles per workshop relative to the resources (in number and expertise) and spaces available (see Table 5). The ratio between these elements clearly shows a greater workload for Plateau-Mont-Royal and Sud-Ouest workshops.

TABLE 5

Comparative Number of Vehicles and Resources by Targeted Workshop

Vehicles and capacity	Picture by targeted workshop			
	Montréal-Nord	Plateau-Mont-Royal	Saint-Laurent	Sud-Ouest
Number of vehicles^[a]	199	295	307	281
Persons in charge of the workshop	1	1	2	1
Resources	12	8	18	6
Mechanics	9	8	13	6
Welders	1	-	3	-
Body repairpersons	1	-	-	-
Mechanical assistants	1	-	2	-
Workstations	15	3	15	3
Ratio vehicle / resource	17	37	17	47
Ratio vehicle / workstation	13	98	20	94

[a] Inventory at January 25, 2021.

Source: Data compiled by the BVG based on information provided by the Service du matériel roulant et des ateliers.

That said, the SMRA has not integrate this factor in their maintenance management. The SMRA is not currently able to define the capacity of the workshops, which would allow the workload to be adjusted between them.

Planning that does not allocate work based on capacity can lead to the overloading of some workshops and, consequently, to recourse to outside services, while other workshops are not at full capacity. One of the anticipated benefits of centralization was supposed to be the ability to spread the workload across all workshops. To date, this has not been achieved.

Planning Aligned with the Needs of the Business Units

The boroughs' current operations are predictable for a given season, but day-to-day operations are adjusted a week in advance and changed based on the weather forecast and the availability of human resources. Thus, the boroughs determine their rolling stock needs depending on their planned operations, which allows them to adjust the SMRA's maintenance schedule accordingly (e.g., time and frequency).

Specific examples of good alignment practices worth noting are:

- The involvement of the boroughs in planning the preparation of seasonal vehicles;
- During the snow loading period, where the support of the SMRA is required in the event of a service disruption caused by a mechanical failure, the workshops' work schedule is adjusted to match 24-hour service of the boroughs (Direction des travaux publics).

The SMRA's planning of maintenance and inspections, however, does not consider all the vehicles and equipment required for boroughs operations, to ensure their availability in sufficient numbers at the appropriate time. In fact, aligning the activities of the workshops and the needs of the targeted boroughs was raised as a major issue that affects the delivery of services.

3.1.3.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers, in collaboration with the business units, establish integrated planning of all interventions to reflect the operational requirements of the business units and the capacity of the workshops, so as to ensure the timely availability of vehicles and equipment to maintain the delivery of services to citizens.

3.2. Organization of Work in the Workshop

To manage vehicle maintenance consistently and effectively, workshops must be properly set up, well outfitted and functional. Adequate equipment, qualified staff in sufficient numbers, and adapted procedures and work methods all contribute to the efficient management of a workshop.

Work Methods

Formal procedures or work methods provide a framework for mechanics' interventions that ensure a consistent vision and technical approach to meet the standards expected by the City. While this consistency among the workshops was one of the goals of centralization, it has still not been achieved at the SMRA.

As a result, differences persist between the workshops, for example:

- Seasonal vehicles: Some workshops clean and inspect the vehicles before storing them at the end of the season to identify the components that need to be repaired and estimate the time required to do the work, plan for it and ensure the availability of the parts needed to repair the defects identified. Other workshops directly store the vehicles at the end of the season and then carry out work (e.g., inspection, procurement of parts and repairs) on one vehicle at a time. This second alternative increases wear and tear on some vehicle components (e.g., accumulated salt causing the corrosion of the vehicle), which could have been avoided by an end-of-season inspection and can result in longer downtime because of delays in procuring parts required to repair the defects identified;
- Replacement of parts on a vehicle: Some workshops use original parts while others use similar brand parts, which can have a major impact on vehicle maintenance costs;
- PMP inspections: The SAAQ recommends that a complete inspection of a vehicle be done before making repairs. This recommendation is not always followed by the workshops.

The absence of formal procedures and work methods leads to discrepancies in practices, in efficiency and in consistency of maintenance management across all mechanical workshops, which can also have an impact on costs.

Standard Time

The standard amount of time required to perform the work is a given that enables the persons in charge of the workshops to adequately plan activities, effectively schedule interventions by mechanics, follow these up, and inform clients of the estimated time the vehicles will be out-of-service. This parameter also serves as a baseline to measure performance in the workshop, uncover variations and remedy these with appropriate measures, such as coaching, training or optimizing work procedures.

This kind of baseline parameter, however, has not been established within the SMRA because of a history of unreliable or incomplete data, which makes it impossible to estimate the time required to do the work and follow it up by type of activity. Some variation can be expected in the time spent performing the same intervention on similar vehicles; however, a comparison of the time spent on inspecting snowblowers (see Table 6) revealed a major variation. Faced with such data, the SMRA is unable to establish a standard time for its interventions, such as the off-season inspection of snowblowers. The result is an inability to forecast the return of vehicles into service for clients or measure the performance of its activities and take the necessary corrective action.

TABLE 6

Comparison of Time Spent on the Off-Season Inspection of Snowblowers from January 1, 2018, to February 28, 2020

Time spent on the inspection (hours)	Occurrences	Percentage of occurrences
0.5	1	5%
2	4	48%
2.5	6	
3	1	33%
4	1	
5	1	
6	2	
9	2	
16.5	1	14%
36.5	1	
45	1	
Total	21	100%

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

3.2.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers take the measures necessary to establish procedures, work methods and standard times to promote consistency and efficiency in vehicle maintenance management across all workshops.

3.3. Circle Checks of Heavy Vehicles

In accordance with the *Highway Safety Code*, operators of HVs must make sure a CC is performed prior to its use by a driver. The City must also ensure the presence of a register of CC reports²⁵ on board the HV at all times so the driver can note any defect observed on the road or attest to the performance of a CC during a roadside check. Failure to meet these requirements results in:

- The driver is liable to fines (in breach of the regulation);
- The City seeing its safety rating downgraded in its HV owner/operator file held by the Commission des transports du Québec.²⁶

These responsibilities lie with the business units and drivers who use HVs as part of their operations. During the CC, drivers must document the CC and indicate any defects observed,²⁷ such as:

- Major defects: Whether identified during the CC or during use of a vehicle (in traffic), the vehicle must be withdrawn from service and its defects immediately reported to the SMRA workshop and borough foreman. The vehicle is then prohibited from circulating until the necessary repairs have been made;
- Minor defects: These do not prevent the safe use of the vehicle and must be reported at the end of a shift so that the SMRA workshop can take the necessary measures to ensure repairs are done within 48 hours, failing which the vehicle must be withdrawn from service.

²⁵ The CC report is a document that informs the operator of the result of a circle check (CC) and, if applicable, of defects found. It also attests to the validity of the CC.

²⁶ Downgrading of the safety rating issued by the Commission des transports du Québec carries the risk of loss of the right to put HVs in circulation and operate them.

²⁷ Documenting CCs involves information that must be filled out by the driver, such as the place of the inspection, vehicle number, mileage, date and time of the inspection, name and signature of the person who performed the CC, and the conclusion of the inspection.

Completion and Documentation of Circle Checks

After evaluating whether the CCs were properly documented in accordance with the regulation, we looked at 1,373 CCs for 48 vehicles chosen at random based on their availability in the targeted public works and mechanical workshops yards.²⁸ Proportionally, 42% (or 574/1,373) of the CC reports examined were not filled out in accordance with the regulation (e.g., missing date or odometer reading, absent conclusion of an inspection (see Table 7)). It is nonetheless possible that the vehicles were safe and free of minor or major defects. In the case of one of the 48 vehicles observed, there was no CC register in the vehicle. Both situations are cases of non-compliance with the regulation. The driver must always be able to demonstrate to a highway controller that a CC was done before using the vehicle.

TABLE 7

Completion and Documentation of Circle Checks

Elements examined on the CC reports	Targeted boroughs									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Sample of heavy vehicles	11		10		16		11		48	
Absent CC register	-	-	1	10%	-	-	-	-	1	2%
CC report examined	237		302		460		374		1,373	
CC report with discrepancies ^[a]	188	79%	71	24%	186	40%	129	34%	574	42%
CC report with defects	31	13%	25	8%	52	11%	41	11%	149	11%
CC report not submitted ^[b]	4	13%	3	12%	15	29%	14	34%	36	24%

^[a] CC report with discrepancies corresponds to inadequately documented reports for such elements as the vehicle number, mileage, date and time of the inspection, conclusion of the inspection, or name and signature of the person who performed the CC.

^[b] CC report not submitted corresponds to reports with defects, a copy of which was not submitted by the driver to the person in charge at the borough.

²⁸ Available vehicles at the Saint-Laurent workshop on November 16, 2020, Plateau-Mont-Royal workshop on November 17, 2020, Sud-Ouest workshop on November 19, 2020, and Montréal-Nord workshop on November 20, 2020.

Among the CC reports we examined, there were cases where the mileage difference between two reports was clearly higher than the daily average of use. Also, some vehicles sampled were out-of-service in the garage because of a defect without a CC report having been documented by the driver. These observations suggest that vehicles are in use without CCs having been performed by the drivers.

The observations in the CC reports were also compiled and compared with a data extraction from the fuel management system (Coencorp) to determine whether HVs were in circulation²⁹ without a CC having been documented the same day. Of the 1,191 cases of refuelling, no CC was performed the same day for 56% of the vehicles involved (see Table 8). This represents a major non-compliance with the regulation, which states that a driver cannot drive a vehicle and an operator cannot allow a vehicle to be driven if the CC has not been performed within the regulatory timeframe.

TABLE 8

Percentage of Refuelling for Which a Circle Check Was Performed on a Corresponding Heavy Vehicle by a Targeted Borough

Refuelling	Targeted boroughs									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
CC performed	98	34%	110	68%	139	38%	182	49%	529	44%
CC not performed	192	66%	52	32%	226	62%	192	51%	662	56%
Total	290	100%	162	100%	365	100%	374	100%	1,191	100%

²⁹ Vehicles that were refuelled are considered to have been used by the business units.

Reporting Defects to the Service du matériel roulant et des ateliers

Beyond the safety aspect, defects observed during CCs that limit the use of vehicles have a major effect on the smooth running and maintenance of a borough's operations. This is one of the reasons that efficient communication and follow-up mechanisms must exist between the borough and the workshop serving it.

When a defect is found, the vehicle's driver must forward a copy of the CC report to a person designated by the borough (e.g., a foreman), detailing the defects observed on a vehicle condition report (VCR) form, and send a copy to the workshop and another to their superior. In 36 of the 149 CC reports (or 24%) identifying defects (see Table 7), the copy that should have been sent to the person in charge at the borough remained in the vehicle register – evidence that defects that should have been reported so that the borough and workshop could take care of them were not, in breach of established procedures.

As for the VCRs, they were not always filled out and sent to the workshops by the operators, and, when they were, they were not kept by the workshops. Therefore, it was impossible for us to evaluate whether all the defects that were observed were first reported to the workshop and then taken care of.

Because of the shortcomings identified in completing and documenting CCs and reporting defects, the City currently risks the downgrading of its safety rating issued by the Commission des transports du Québec. This could ultimately result in the loss of the right to put its HVs into circulation and operate them and have an impact on carrying out the City's operations (e.g., snow removal, selective collection, road maintenance).

3.3.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers, in collaboration with the business units, establish control mechanisms aimed at ensuring that the circle checks are systematically performed and properly documented, and that defects are reported to the Service du matériel roulant et des ateliers before heavy vehicles are used, so that they comply with the regulation.

3.4. Implementation and Follow-up of Maintenance

In its supporting role to the City’s operations, the SMRA is responsible for ensuring that vehicles are available, functional and compliant with the applicable regulation. This is achieved through the implementation of Preventative Maintenance and PMP Inspection programs.

3.4.1. Preventative Maintenance

In the absence of mechanisms to evaluate the completion rate of planned maintenance, a picture of the backlog of maintenance points at December 4, 2020,³⁰ was drawn using data from the MIR system. In 39% of cases, vehicles’ planned maintenance was behind schedule (see Table 9). A similar look at vehicles by category revealed that all categories experienced delays in the vehicle maintenance points, ranging from 27% for “Category E – Heavy tool vehicles” to 64% for “Category D – Light tool vehicles,” including 29% for “Category C – Heavy trucks,” which include HVs that are subject to the ODHV Act.

TABLE 9

Percentage of the Vehicle Fleet of the Targeted Workshops Having One or More Late Maintenance Points at December 4, 2020

Elements found	Targeted workshops				Total
	Montréal-Nord	Plateau-Mont-Royal	Saint-Laurent	Sud-Ouest	
Vehicles and equipments (A)	172	244	284	222	922
Vehicles having one or more late maintenance points (B)	52	114	68	124	358
Late maintenance points (C)	81	195	119	223	618
Percentage of the vehicle fleet having one or more late maintenance points (B/A)	30%	47%	24%	56%	39%

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

³⁰ Data extractions from the MIR system provided by the SMRA.

The relatively high number of vehicles whose maintenance is overdue is an indicator of pressure on the workshops. This finding, added to the shortcomings previously identified in the planning of maintenance points, fails to provide assurance that the preventative maintenance of the City's vehicles is being adequately managed by the workshops. Preventative maintenance that has not been performed can result in breakdowns that require corrective actions, higher additional maintenance costs and service interruptions for clients.

3.4.1.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers take the necessary measures to ensure implementation of the Preventative Maintenance Programs by the mechanical workshops on the City's entire vehicle fleet, so as to foster the availability and proper operation of the vehicles and equipment required for delivery of the services provided by the business units.

3.4.2. PMP Inspections of Heavy Vehicles

Thanks to the SAAQ's recognition of the City's PMP inspections, the City can perform its own HV mechanical verifications based on the minimum frequencies established in the *Regulation respecting safety standards for road vehicles*.

Implementation and Frequency of PMP Inspections

Since no mechanism is available to monitor the implementation of planned PMP inspections, the SMRA is unable to evaluate compliance with the planned schedule. The findings presented in this section, therefore, are not supported by evidence of compliance from the SMRA but rather on data extractions from MIR and their analysis by the BVG.

The comparative analysis (see Table 10) of the number of PMP inspections performed in two complete years (2018 and 2019) compared with the number that would have been required based on the yearly mileage of the HVs during the same years highlights cases of non-compliance.

TABLE 10

Comparison of the Frequency of PMP Inspections Implemented Based on the Mileage Covered by the Heavy Vehicles of the Targeted Workshops for the Years 2018 and 2019

Targeted workshops	Frequency of PMP inspections required based on mileage covered							
	3-month frequency (heavy vehicles covering more than 20,000 kilometres/year)				6-month frequency (heavy vehicles covering less than 20,000 kilometres/year)			
	Number of HVs	PMP inspections required	PMP inspections performed	PMP inspections not performed	Number of HVs	PMP inspections required	PMP inspections performed	PMP inspections not performed
Montréal-Nord	2	16	6	10	42	168	153	15
Plateau-Mont-Royal	3	24	20	4	60	240	241	-1
Saint-Laurent	9	72	52	20	62	248	239	9
Sud-Ouest	3	24	14	10	48	192	183	9
Total	17	136	92	44	212	848	816	32
			68%	32%			96%	4%

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

In general, planned and performed PMP inspections failed to comply with the legal provisions based on the km travelled during the targeted period:

- 44 PMP inspections (or 32%) of HVs that travelled over 20,000 km/year were not performed at the required three-month frequency;
- 32 PMP inspections (or 4%) of HVs travelling under 20,000 km/year were not performed at the required six-month frequency;
- 1 extra PMP inspection was performed during this period.

These findings raise questions about whether the frequencies of PMP inspections are periodically adjusted based on the mileage travelled and whether controls or mechanisms are in place to ensure their compliance.

These results may stem from inadequate planning by the SPOID (e.g., triggers of maintenance points not adjusted based on mileage) or inadequate management by the workshops (e.g., completion delays and backlogs).

A similar picture (see Table 11) for a wider period, from January 1, 2018, to February 28, 2020, found that PMP inspections were not systematically performed in a timely fashion by the targeted workshops.

TABLE 11

Compliance with the Frequency of PMP Inspections of Heavy Vehicles for the Targeted Workshops from January 1, 2018, to February 28, 2020

Compliance with the frequency of PMP inspections	Targeted workshops									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Early	42	28%	44	19%	86	30%	38	20%	210	24%
On time	52	34%	138	59%	105	36%	93	48%	388	45%
Late	57	38%	52	22%	100	34%	61	32%	270	31%
Total	151	100%	234	100%	291	100%	192	100%	868	100%

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

In general, 31% of PMP inspections were performed late for the targeted workshops, and 69% of PMP inspections were performed early or on time. These results raise questions about the coordination of inspections.

Documentation of PMP Inspections

Given that all the pictures drawn up from data in the MIR system may include entry errors or possibly incomplete data, examining PMP inspection records (paper documents filled out by the mechanics) was deemed necessary to validate previous observations and evaluate other requirements of the regulation, including that:

- Owners must keep a two-year history of information and documents related to the maintenance and inspection of each HV;³¹
- HVs for which repairs of observed defects were not done in the prescribed timeline must be withdrawn from service.

³¹ The *Regulation respecting safety standards for road vehicles* establishes the rules for maintaining a vehicle record and preserving the documents that it must contain, including the mandatory time the targeted documents and information must be preserved.

At the SMRA, results of PMP inspections performed by mechanics are recorded in the MIR system by the persons in charge of the workshops. Although digital information about PMP inspections is entered in MIR, in the event of having to appear before the Commission des transports du Québec, it is the documentary evidence of PMP inspections and maintenance done on HVs by mechanics (signatures) that is required to attest to the City's compliance with the regulation. The absence of such documents would not allow the City from demonstrating adequate management of the maintenance and inspection of an HV, should that HV be involved in a major accident.

In 37 of the HVs sampled in our evaluation of CCs, we assessed compliance with the regulation for the following aspects, based on the PMP inspection files³² completed by the mechanics (between 3 and 5 files per HV):

- PMP inspection files documented and preserved as required (e.g., HV number, date of the inspection, mechanic's signature, mileage on the odometer, element verified with the comment "compliant" or "non-complaint," and measurements of the break lining or camshaft rotation for HVs whose GVWR is $\geq 7,258$ kilograms (kg));
- PMP inspections performed at the required frequencies³³;
- Repair work done on the defects observed within the prescribed time.

A review of the analyses performed on the 160 PMP inspection files for the 37 HVs representing 14% of the HV fleet of the targeted workshops (see Table 12) shows non-compliance in several respects.

³² The reports examined involved PMP inspections conducted during the period from January 2018 to November 2020.

³³ The regulation requires that an HV for which the PMP inspection is overdue, or repairs have not been done within the prescribed timeline, must be withdrawn from service.

TABLE 12

Compliance of PMP Inspections of Heavy Vehicles for the Targeted Workshops

Elements examined	Results for the targeted workshops									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
HVs examined	11		9		7		10		37	
HVs with shortcomings in the elements checked from one PMP inspection to another ^[a]	11	100%	7	78%	7	100%	10	100%	35	95%
PMP inspection reports	49		37		31		43		160	
PMP inspection reports signed and dated ^[b]	41	84%	35	95%	20	65%	35	81%	131	82%
PMP inspection reports – mileage missing/incorrect	18	37%	19	51%	4	13%	20	47%	61	38%
Frequency of PMP inspections^[c]	29		27		18		25		99	
Proper frequency	24	83%	23	85%	18	100%	22	88%	87	88%
Late handling	3	10%	4	15%	0	0%	3	12%	10	10%
Early handling	2	7%	0		0		0		2	2%

^[a] Result of the comparison of PMP inspection reports for the same HV.

^[b] Based on the regulatory requirements, the date and signature of the mechanic who performed the inspection must appear in the PMP inspection report (section 211 of the *Regulation respecting safety standards for road vehicles*).

^[c] The evaluation of compliance with the frequency of PMP inspections was based solely on 99 of the 160 reports examined. The first reports examined (37) served as a reference (0 time) for evaluating the frequency of the subsequent inspections. Other cases did not allow us to determine whether the PMP inspection frequency was adequate (e.g., date or mileage not indicated).

There was 100% compliance with vehicle identification (not presented in Table 12) in the forms completed by the mechanics, as well as the recorded presence in the forms of break lining measurements. This best practice reduces the risk of forgetting to measure these elements for vehicles with a GVWR $\geq 7,258$ kg.

Regarding disparities in elements checked from one inspection to another, mechanics use the same PMP inspection forms programmed in MIR when a vehicle is put into service by the SPOID; however, they do not fill them out the same way. The fact that 95% of the PMP inspection forms do not contain elements that should be checked in a recurring way for a given HV, and that components are evaluated as being compliant when they might not be present on the inspected HV, raises questions about the quality of the PMP inspections performed. Add to this the fact that 4.4% of the PMP inspection forms (7 of 160) examined listed only defects observed during the inspection and failed to mention any compliant element. This practice is contrary to the regulation, which requires that the compliance or non-compliance of each element be entered on the form.

It is pertinent to mention at this stage that the SAAQ makes available a generic PMP inspection form, which contains inspection elements for every type of HV. Using an inspection form specific to a vehicle, however, has the advantage of limiting the inspection elements to only those components that correspond to that HV. In the case of the SMRA, the PMP inspection forms made available to the workshops were designed by type of vehicle and specific sub-categories. However, in general, they do not contain all the elements to be inspected on the vehicle; in other words, the forms include inspection elements that may apply to only some HVs in a category (e.g., certain HVs have pneumatic suspension while others have hydraulic suspension). The PMP inspection forms created by the SMRA have also not been updated for several years. However, when a PMP inspection form is not appropriate for a particular HV, the workshops have the option to use the SAAQ's generic file.

Even if the inspections were performed correctly, vigilance is recommended to ensure that PMP inspections are properly documented, and appropriate control is necessary to avoid that they are put in doubt due to irregularities in the forms.

Compliance Sticker on Heavy Vehicles

The City is an agent of the SAAQ. As such, each workshop is responsible for affixing a compliance sticker attesting that the HVs are safe once a PMP inspection has been completed and repairs have been made to the defects observed. We looked for the presence of a compliance sticker on a sample of 51 HVs in service at the time of our audit, representing 19% of the HV fleet in the targeted workshops. We found non-compliance in 20% of the cases (see Table 13), involving one HV whose sticker was not affixed and nine other HVs whose stickers had expired or were not punched to indicate the period of validity of the PMP inspections performed.

TABLE 13

Compliance of Stickers on Heavy Vehicles for the Targeted Workshops

Elements examined	Targeted workshops									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Inventory of HVs^[a]	47		70		83		64		264	
HVs examined	10	21%	9	13%	21	25%	11	17%	51	19%
Sticker missing	1	10%	-	0%	-	0%	-	0%	1	2%
Sticker present	9	90%	9	100%	21	100%	11	100%	50	98%
• Compliant sticker	9	100%	8	89%	15	71%	9	82%	41	82%
• Non-compliant sticker	0	0%	1	11%	6	29%	2	18%	9	18%

[a] Inventory of active HVs (data from the SMRA) during the period audited, i.e., January 1, 2018, to February 28, 2020.

In summary, the shortcomings found in the management of PMP inspections for HVs (completion, frequency and documentation) have a significant impact on compliance with the regulation and maintaining the HVs in good working condition. Add to these other findings of non-compliance in which HVs without “the right to circulate” are nevertheless being used for operations (an element addressed in section 3.4.3.).

These cases of non-compliance of PMP inspections are subject to fines. But the more serious consequences for the City would be the downgrading of its HV owner/operator safety rating³⁴ and the loss of recognition of the City as an agent of the SAAQ, which would hinder the delivery of services to citizens.

³⁴ Downgrading of the safety rating issued by the Commission des transports du Québec carries the risk of losing the right to put HVs into circulation and operate them.

3.4.2.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place mechanisms aimed at ensuring that the performance and documentation of Preventative Maintenance Program inspections and repairs of defects observed meet the regulatory requirements, so that the City can maintain the recognition of its Preventative Maintenance Program inspections and its privilege to operate heavy vehicles.

3.4.3. Corrective Maintenance (Repairs)

In addition to planned interventions (e.g., preventative maintenance, PMP inspections), the daily activities of the workshops include corrective maintenance (e.g., unforeseen breakdowns). The prompt repair of defects observed on vehicles in service is especially crucial for the business units' delivery of services. In looking at this maintenance aspect of the City's vehicle fleet, we focused specifically on the defects observed on the HVs by the targeted workshops.

The *Highway Safety Code* states that HVs with minor defects not repaired within 48 hours are prohibited from circulating, in the same way as those with major defects. We looked at each of the defects identified in the CC reports examined, as well as those identified in the PMP inspections, to see whether the repairs had been done by the workshops before the vehicles were put back into service.

Repair of Defects Observed on Heavy Vehicles during Circle Checks

Of the 80 defects observed by drivers and documented in the CC reports for the 35 HVs examined, 61 were minor and 19 were major. Table 14 presents the results of our analysis.

TABLE 14

Repair of Defects Observed During Circle Checks

Elements examined	Targeted workshops									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
CC report with defects	31		25		29		41		126	
Vehicles with defects	9		6		10		10		35	
Defects observed	18	58%	10	40%	19	66%	33	80%	80	63%
Defects without evidence of repairs	6	33%	1	10%	10	53%	20	61%	37	46%
Defects not repaired	6	26%	-	0%	-	0%	-	0%	6	6%
Defects repaired	6	33%	9	90%	9	47%	13	39%	37	46%
Vehicles without the right to circulate	8	89%	2	33%	7	70%	8	80%	25	71%

The regulation stipulates that all documents attesting to the repair of defects identified during CCs must be preserved for a period of at least 12 months. In the case of 37 defects (46%), however, no evidence of repairs could be traced back by the workshops in their intervention history. Some might have been repaired without a work order (WO) being documented, which appears to be a common practice for all the targeted workshops. Nevertheless, even in these cases, the City was not compliant. In the case of 6 other defects observed, the same problem occurred each time on the same vehicle without the Montréal-Nord workshop correcting the situation.

Repair of Defects Observed on Heavy Vehicles during PMP Inspections

In the case of repairs of defects observed during PMP inspections performed within the prescribed timelines, we found further non-compliances in addition to those previously identified, involving the absence of evidence of repairs to 16% (37 of 227) of the defects observed.

TABLE 15

Repair of Defects Observed During PMP Inspections

Elements examined	Targeted workshops									
	Montréal-Nord		Plateau-Mont-Royal		Saint-Laurent		Sud-Ouest		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
HVs examined	11		8		7		9		35	
PMP inspections evaluated with defects	12		8		8		11		39	
Defects observed	68		65		43		51		227	
Defects without evidence of repair	17	25%	2	3%	13	30%	5	10%	37	16%
Defects repaired	51	75%	63	97%	30	70%	46	90%	190	84%
Vehicles without the right to circulate	8	67%	0	0%	1	13%	1	9%	10	26%

Vehicles Prohibited from Circulating

Failure to repair the observed defects (minor, major) within the prescribed timelines results in the vehicle being withdrawn from service.

Among the HVs examined (see Table 14) for compliance of the CCs, 71% (25 of 35) were used for the boroughs' operations although one or several defects found had not been repaired within the prescribed timelines, or there was no evidence attesting to a repair having been made.

In the case of the HVs (35) examined (see Table 15) for compliant PMP inspections, 10 (or 26%) had circulated although their defects had not been repaired, or there was no evidence of repairs shown, which would have required the vehicle to be withdrawn from service under the regulation.

These combined elements corroborated the statements of the persons from the boroughs and workshops that we audited asserting that, despite the vehicles being prohibited from circulating and physical means being used to prevent their operation (e.g., out-of-service card, lock on the driver's wheel), the vehicles were nevertheless used by the operators. Such situations are normal occurrences for some boroughs and represent major non-compliances.

We previously found shortcomings in completing CCs and reporting defects observed, which suggests that the vehicle non-compliance is more significant than observed.

The review of the defects observed, dates of completion of the work and dates of use of the vehicles targeted show that, on multiple occasions, vehicles were in service although they did not have the right to circulate, including some vehicles with major defects. For example:

- Major defects observed in one of the HVs in Sud-Ouest borough on January 12, 2020, were only repaired on January 17, 2020, although the vehicle was in service between these two dates;
- Minor defects observed on November 19, 2018, were only repaired on December 3, 2018, although the HV, belonging to the Montréal-Nord borough, was refuelled nine times in the meantime.

Using an HV that should not be in service because of a defect can result in the loss of the driving licence or a fine for the driver, as well as the loss of the agent status granted by the SAAQ and the downgrading of the HV owner/operator safety rating for the City.

3.4.3.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers, in collaboration with the business units, establish control mechanisms to ensure that only heavy vehicles with the right to circulate are used for their operations, so that the City can comply with the applicable legal provisions and thus maintain its privilege to operate heavy vehicles to ensure the continuity of its delivery of services to citizens.

3.5. Alignment and Coordination with the Client

In the case of planned vehicle servicing, the understanding is that the borough must be informed ahead of time to ensure that its operations are not compromised. It is also understood that documented communication and follow-up mechanisms should be established to keep track of the vehicles that are out-of-service in the workshops or at an external service provider so the borough can resume its operations at the time the vehicle is scheduled to be put back into service.

Vehicle Requisition

In scheduling maintenance and planned inspections, discussions between the workshops and boroughs are required to determine when the vehicles will be made available. No consistently established mechanism exists, however, between the targeted boroughs and workshops for the requisition of vehicles.

A review of weekly notifications for maintenance and planned inspections transmitted to the boroughs by the SPOID identified recurring cases of recalls of vehicles that are late in preventative maintenance or PMP inspection. This situation is irritating for the workshops because the vehicles are not systematically made available by the boroughs, which affects completion of the planned servicing.

From the boroughs' standpoint, the availability of vehicles is an issue in maintaining the delivery of services to citizens, especially because of a lack of replacement vehicles in the event of a failure, and the limited number of vehicles in high demand (street sweepers and sewer vehicles). This explains why the boroughs do not always free up the vehicles as planned by the SPOID.

However, maintaining vehicles in service that have been recalled for maintenance carries the risk of premature wear and tear and unjustified maintenance costs because of a failure to perform preventative maintenance in a timely fashion. This can result in the vehicle being out-of-service for a longer period once it finally makes it to the workshop because of the need to catch up on the maintenance backlog. It should also be pointed out that maintaining HVs in service that have been requisitioned for PMP inspections can result in non-compliance with the regulation governing these vehicles, carrying risks for the City.

In short, this problem again highlights shortcomings in the SMRA's planning of interventions. Vehicle requisition mechanisms need to be put in place and applied, alongside the other mechanisms previously recommended for coordinated planning between the workshops and business units, and for implementation and follow-up of vehicle maintenance operations.

3.5.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers, in collaboration with the business units, establish coordination mechanisms regarding the requisition of vehicles and apply them consistently, so as to allow required maintenance and inspection work to be done in a timely manner to ensure the continued sound operation of the vehicle fleet.

Follow-Up of Out-of-Service Vehicles

Because an out-of-service vehicle has an impact on the delivery of services, workshops must monitor and document the progress of the work under way (internal or external) and communicate this to the boroughs.

We found an almost total lack of documented follow-up mechanisms for sharing with clients the status of out-of-service vehicles in the workshops or with an external supplier. No formal follow-up mechanism exists within the SMRA to address this.

The audited boroughs affirmed having to actively seek out information on the status of their vehicles. They were unaware of the time that the vehicles would be out-of-service and the follow-up of these is not systematically established within the workshops.

In the case of the boroughs, uncertainty about the amount of time that the vehicles would be out-of-service was an irritant that had an impact on their activities, especially since they have no spare vehicles. As a result, they rent vehicles externally, borrow a vehicle from a neighboring borough or postpone planned activities due to the lack of available vehicles to maintain their operations.

We also identified a lack of systematic quality control of work performed externally. Vehicles put directly back into service might have defects or repairs that were not properly addressed and that could have an impact on the operations of the boroughs and result in additional costs to the City.

3.5.B. Recommendation

We recommend that the Service du matériel roulant et des ateliers, in collaboration with the business units, establish a formal and consistent monitoring mechanism on the progress of all interventions and work being done on out-of-service vehicles and equipment in the workshop, as well as the planned timelines for being put back into service, to enable the boroughs to make informed decisions on the alternatives required to maintain their operations.

3.6. Procurement of Parts and Equipment

Efficient vehicle maintenance management depends on several factors, including the timely availability of replacement parts, which requires aligning needs with the procurement functions for which the SA is responsible.

Needs planning must be coordinated between the workshop and the SA to ensure that the required material resources are available in sufficient quantity and at the right time. Failing this, workshops have to resort to procurement, which potentially prolongs the amount of time that a vehicle is out-of-service.

Needs Planning for Parts and Materials

In the case of planned interventions, the expectation is that the needs for parts and materials will have been communicated with sufficient notice by the workshops to the SA to give the workshops flexibility in managing the work and putting the vehicles back in service as soon as possible so that the boroughs can resume operations. The MEDA's responsibility is to ensure that the stocks needed are available at the required time. Turning to emergency external purchases should only occur on an occasional basis, for parts required for unforeseen repairs that are not available in stock.

Yet the SMRA's maintenance and PMP inspection planning is not communicated to the SA to ensure that the needs for the required parts and materials are met. The absence of any alignment has in fact been identified as a major issue that has a strategic and operational impact:

- Strategically, purchase agreements for products or external services made by the SA must in principle reflect the needs of the SMRA, based on consumption analyses from intervention histories. The present situation is not optimal. These analyses, which help guide purchasing strategies, are not common practice because of a lack of clarity on the intervention history (absence of product codes) and on the consumption forecasts arising out of the SMRA's orientations (e.g., vehicle purchase and retirement, and outsourcing of a type of intervention);
- Operationally, the interaction between the workshops and the MEDAs is based on immediate needs the same day that an intervention is being performed on a vehicle and not with a view to planning, even if the intervention was already scheduled. This has a direct impact on the length of time a vehicle is out-of-service and on the delivery of services by the boroughs.

What's more, the SA is not necessarily informed about the SMRA's decisions regarding the management of the vehicle fleet. This can result in inadequate procurement, an inventory of parts and materials that is not aligned with the fleet of active vehicles and, consequently, additional costs for the City.

In summary, shortcomings in alignment between the SMRA and the SA could compromise the timely availability of stocks required for interventions on the vehicles, leading to reactive procurement.

As part of the deployment of its business model,³⁵ the SA has several processes under way to ensure alignment with the SMRA (e.g., consumption forecasts and recurrences) and better input into procurement planning,³⁶ calls for tenders and inventory management. These processes, which are aimed at correcting the shortcomings found, require that a series of measures be implemented beforehand by the SMRA to resolve the other weaknesses identified, especially regarding the inventory of vehicles, integrated planning of interventions and data quality, which is addressed in section 3.7.

³⁵ From the standpoint of moving the purchasing function towards a logistics chain, the main orientations of the SA's new business model (2020) are developing and consolidating procurement expertise and implementing a service approach centered on satisfying internal partners.

³⁶ The SMRA is currently collaborating with the SA on a pilot project (Ville-Marie mechanical store) to identify the parts and equipment needed to maintain a sample of vehicles and thereby adequately support the procurement process. To achieve this, and without having complete data in MIR, the stakeholders are referring to the manufacturers' manuals.

Inventory Management and Availability of Parts

Identification of parts and materials

Most of the products consumed by the City's business units are coded in the Système intégré Montréal (SIMON),³⁷ which enables the SA to compile a history of their consumption. Other products are associated with ranges or categories of products; for example, the purchase of various types of oil (e.g., engine, transmission) is associated with the category "Oil" and not with codes specific to a type of oil. In this case, the consumption trail of a specific item is lost.

No standards have been established for coding the parts purchased for vehicles and consumed by the SMRA. Consequently, each product purchased is associated with a range or category of products and not a unique number, which makes the information about consumption difficult for the SA to use.

Warehouse and in-store inventory

To ensure an optimal level of parts in inventory, parameters (minimum and maximum levels) must be established based on a history of consumption, frequency of operations, and critical status of the vehicles.

Given the shortcomings observed in needs planning and the coding of parts, inventory parameters, while well established, are not optimal and need to be adjusted. This imbalance can be reflected in the field by levels that are too high or too low for certain products and less-than-optimal use of space, something that is already limited in warehouses. Another consequence is that the persons in charge of the workshops turn to the MEDA to determine stock levels for anticipated needs, especially in recurring situations of inventory shortages or the opposite. While this might be justified, it can lead to non-optimal management within the stores and warehouses that serve the SMRA.

Furthermore, in the case of the warehouses, the SA has no knowledge of the stocks being kept there, and stocktaking is not optimal. This can lead to inappropriate purchases and poor stock maintenance and, ultimately, to the obsolescence of the products not used. In fact, it is common practice for warehouses to use the servicing of a vehicle to stock up on parts by purchasing lots to build up a reserve in anticipation of eventual needs and allocating the purchase price of the entire lot to the one vehicle rather than stocking based on planned needs and allocating the price of a single part to the vehicle needing the repair.

In the case of the stores, there is an access control problem resulting from intrusions after service hours. It is common practice for workshops that have stores to use this inventory for their operations. Since this type of consumption is not systematically documented, this affects the quality of data on the SA inventory and on vehicle maintenance costs. These types of situations illustrate the absence of alignment in the planning of operations between the workshop and the store.

³⁷ SIMON is an integrated system that allows the City's users to assume supply, financial management and human resource management activities.

In the absence of any coordination between the needs for parts and materials for interventions planned by the SMRA and the logistical operations of the SA, standardizing the operating hours³⁸ of the mechanical workshops and stores might seem like a mitigation measure. But according to SA management, this would clearly require more resources, which, in addition to being costly, would not solve the basic problem of non-aligned planning.

It is essential that maintenance work be planned by the SMRA and shared with the SA, which, in turn, must be able to ensure product availability.

Given that a supply shortage could have several consequences, including an idle labour force, disrupted work cycle in the workshops, longer out-of-service time for vehicles and, ultimately, an impact on the quality of the delivery of services to citizens, it is required that the parts and quantities kept in inventory be determined based on consumption analyses and forecasts. For these reasons, the SA and SMRA must be aligned to ensure the efficient management of rolling stock maintenance.

3.6.A. Recommendation

We recommend that the Service de l’approvisionnement, in collaboration with the Service du matériel roulant et des ateliers, establish consumption analyses and plan the distribution of the parts and materials required by the workshops, to ensure adequate and efficient management of the inventory needed to maintain the City’s fleet of vehicles.

3.6.B. Recommendation

We recommend that the Service de l’approvisionnement, in collaboration with the Service du matériel roulant et des ateliers, determine the parts and materials to be kept in inventory, as well as the minimum and maximum level or other required parameters reflecting the needs for planned work and the critical needs of the active fleet, to ensure the smooth operations of the workshops and the availability of vehicles for the delivery of services by the business units.

³⁸ Hours of operation: 3 of 10 stores offer a supply service 7 days a week. Three stores ensure a supply service Monday to Friday, while the other stores are open Monday to Thursday. In comparison, the mechanical workshops operate days and evenings from Monday to Friday, and even 24 hours, 7 days a week during snow loading periods.

3.7. Management and Cost Monitoring Information

3.7.1. Intervention History

Documenting Interventions

Adequate compilation of maintenance and repair work provides a history of the costs associated with each vehicle, which consist of expenditures for the work performed in the workshops (e.g., labour, parts, equipment and supplies), and the costs incurred for work done externally.

In the case of the SMRA, interventions and costs are compiled in the WO in MIR and supported by the following two systems:

- Temp Diff, in which the hours worked on a vehicle are entered by the mechanics and associated with an intervention code;
- Gest Pièces, in which the costs of the parts and equipment used to perform the work in the workshops are derived from the purchases recorded by the SA in SIMON.

An intervention history is useful on different levels:

- Operationally: to be able to consult details of past interventions (e.g., diagnostics, details of the work performed, parts replaced or installed) to determine more efficiently the work to be done on a vehicle;
- Strategically: SMRA managers can use the intervention history in the GMAO for purposes of analysis (e.g., repeated breakdowns, failure rate, maintenance cost by type of vehicle) and decision-making to ensure optimal management of the vehicle fleet (e.g., outsourcing a type of maintenance, replacing a type of vehicle).

To produce reliable analyses, the maintenance history in a GMAO system must be complete, i.e., all interventions must be entered and structured, and the different types of maintenance and repair work must have pre-established codes that are used in a similar way across all workshops.

History of structured interventions

We found the existence of codes for this element related to maintenance points (maintenance and PMP inspection), as well as pre-established repair codes. These codes are used by the mechanics to document their interventions in the Temp Diff system and, once validated by the person in charge of the workshop, they are carried over into the WO of the MIR system.

The existing intervention codes were established several years ago, however, and need updating to reflect the new types of work performed on new technologies (e.g., components of electric vehicles) and for the new systems integrated with the vehicles (e.g., antipollution system). In the absence of pre-established codes for all interventions (e.g., inspections, maintenance and repairs), some tasks are

documented under a code related to similar work (approximate coding) or under generic codes. Consequently, the history is distorted by poorly codified interventions.

History of completed interventions

We found major shortcomings in the completeness of the intervention history, including the following:

- Corrective maintenance (repairs) is not systematically documented in the MIR system (e.g., in the case of the Montréal-Nord workshop, only those repairs that required replacement parts or more than two hours of labour were documented). This shortcoming was corroborated by the absence of a WO associated with certain repairs of defects observed during CCs on HVs;
- Interventions were not systematically assigned to the corresponding intervention codes (e.g., in the case of a series of repairs done externally, involving several codes, the billed cost was documented under a single code in the WO);
- Documentation of parts installed on vehicles in the WO was inconsistent, and the detailed descriptions of these parts were missing (e.g., reference number, make, model, category). This limits the availability of useful information for supply decisions and for consumption analyses;
- Documentation of interventions in the Temp Diff system is inconsistent or insufficiently detailed (e.g., nature of the task performed on the suspension, such as inspection, repair, replacement). This means a lack of quality information to rely on during subsequent work;
- The intervention history is incomplete for some workshops since centralization in 2017 (e.g., the Montréal-Nord workshop has only had access to the Temp Diff system since November 2020).

It also appears that the labour hours charged to vehicles are not always representative of the work performed (e.g., non-productive hours or hours associated with other vehicles), which results in inaccurate costs.

Without being able to evaluate the extent of the problem, the various specific cases we identified show that the history of work done on vehicles is not representative (MIR). This could have an impact on management analyses (e.g., identification of recurring breakdowns) and on managing the vehicle in the workshop (e.g., misunderstanding the reasons for the recurrences and the nature of the vehicle's breakdowns).

As a result, the City has incomplete data on the maintenance costs (e.g., labour, parts and equipment) needed to produce reliable management indicators and informed decision-making regarding the management of its fleet (e.g., maintenance, replacement).

3.7.1.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place measures aimed at providing a complete, structured and reliable history of all the work performed on the City's vehicles and equipment, including work done under warranty, to foster continuity in the management and follow-up of interventions and to ensure availability of the data required for informed decision-making regarding the management of its fleet of vehicles.

3.7.2. Monitoring Costs

Compiling the costs associated with the maintenance of each vehicle is necessary to ensure informed decision-making regarding management of the vehicle fleet.

The operational budget of a mechanical workshop must be established based on the vehicle fleet serviced (e.g., category, age and number of assets) and the costs required to maintain it. Justifying the replacement of a vehicle is based on various criteria, including maintenance and repair costs. These costs are both a deciding factor and complementary to the other criteria, such as the age and level of use of a vehicle.

Labour Hours Spent on Interventions

We previously found in the intervention history that it is common practice for some repairs to be done without a WO being documented in MIR. Our examination of the defects observed during the CCs³⁹ confirmed that 45% of these 80 defects on HVs were repaired without a WO being created. This has an impact on the completeness and reliability of the costs involved in maintaining and repairing the vehicle.

In addition, several workshops did not have access to the SMRA's applications, such as Temp Diff and Gest Pièces. While management of the SMRA's rolling stock was centralized in 2017, Temp Diff was implemented gradually at the Saint-Laurent workshop from 2019 to spring 2020, while the Montréal-Nord automotive workshop has only had access to Temp Diff since mid-November 2020. This was also the case for other workshops at the time of our audit.⁴⁰ Consequently, for the periods when these apps were inactive, no data of the labour hours were available for the vehicles in the affected workshops. In the case of the Montréal-Nord workshop, the history (labour hours) spans almost 4 years of operations on more than 200 vehicles,

³⁹ The CC reports examined for each of the HVs sampled covered the period from January 1, 2017, to November 19, 2020. The defects identified covered a period from March 2018 to November 2020.

⁴⁰ At January 1, 2021, problems accessing Temp Diff and Gest Pièces were still ongoing for several SMRA workshops.

including HVs. Late access to these applications has had a direct impact on the history of both the interventions and the maintenance costs.

Inaccurate, incomplete, or absent data on one of the components of direct costs, such as labour, deprives the SMRA of reliable analyses and, consequently, of informed decision-making about the management of the vehicle fleet.

Hourly Labour Rates

The costs associated with labour consist of the number of hours worked multiplied by a set hourly rate. This rate takes into consideration all the expenses associated with maintenance management (e.g., employees' salaries, fringe benefits, costs to operate the automotive workshop). It is recommended that this rate be set for a definite period to avoid unjustified fluctuations and that it be updated annually to reflect inflation. Use of an arbitrary variable hourly rate or ignorance of the true hourly rate can skew the data and affect the analyses and decision-making arising from them.

In the case of the SMRA, the current hourly rate was set at \$97/hr for all the workshops. This rate, in effect for at least five years, has not been updated. Since the centralization in 2017, business units are no longer billed for services rendered.

To evaluate the consistency of the labour costs billed for the vehicles, we drew a picture of the hourly rates associated with the hours spent on interventions performed by WO by all the workshops for a period of 12 months (from October 2018 to September 2019).

TABLE 16

Range of Hourly Labour Rates Associated with Work Orders from October 2018 to September 2019

Range of hourly labour rates	Number of rates in the range	Occurrences		Labour hours	
		Number	%	Number	%
\$0	1	11,294	9%	14,014	7%
Between \$0.25 and \$94	32	11,683	9%	24,078	11%
\$97	1	105,271	80%	169,030	79%
Between \$97.50 and \$1,164	73	2,494	2%	6,731	3%
Total	107	130,742	100%	213,853	100%

Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

The use of 107 different hourly rates, ranging from \$0 to \$1,164, when there is an established rate of \$97/hr, which is applied in 80% of cases, does not provide assurance that labour costs assigned to vehicles are representative of reality.

The use of inappropriate hourly rates has an impact on the analyses and decision-making arising from these, such as the outsourcing of some work. The SMRA must ensure that the established hourly labour rate corresponds to the true costs incurred, that it is used for all workshops in their interventions, and that it is updated annually.

Parts and Equipment Installed on Vehicles

Regarding the costs of the parts and equipment installed on vehicles, the expectation is that they would be reflected in the MIR to enable the SMRA to have reliable data on this component of the costs required to maintain its fleet in good working condition.

The comparison (see Table 17) of the data from the MIR for the parts and equipment installed on the vehicles with the data entered in the SIMON system⁴¹ for the years 2018 and 2019 shows that the value of the expenditures recorded in SIMON is 181% greater than what is recorded in MIR for the targeted workshops. This could be partly explained by an incomplete intervention history in MIR.

⁴¹ Data retrieved from accounting items “Parts and Accessories” (56507) and “Maintenance and Repair – Vehicles” (55403).

TABLE 17

Cost Comparison of Parts and Equipment Available in the Maintenance, Inspection, Repair (MIR) and the Système intégré Montréal for the Years 2018 and 2019

Data source	Cost of parts and equipment for the targeted workshops		
	2018	2019	Total
SIMON	\$4,317,097	\$4,573,309	\$8,890,406
MIR ^[a]	\$1,571,180	\$1,588,776	\$3,159,956
Difference	\$2,745,917 + 175%	\$2,984,533 + 188%	\$5,730,450 + 181%

^[a] Source: Data compiled by the BVG based on data extractions provided by the Service du matériel roulant et des ateliers.

As well, the parts used for vehicle maintenance work are not systematically and adequately documented in the MIR system (e.g., restocking of the inventory in the warehouses charged in full to a single vehicle).

Also, as previously mentioned, poor warranty management means that the City is not assured that its vehicles are being maintained in such a way as to optimize costs.

The inconsistencies and shortcomings found do not provide assurance that the costs of the parts and equipment in the MIR system reflect the true costs for each vehicle or for the entire fleet of vehicles.

3.7.2.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place mechanisms aimed at ensuring the completeness and quality of the data on interventions entered in the Gestion de la maintenance assistée par ordinateur system by the workshops, whether for hours worked, parts and supplies used, or the use of the established standard labour rate, to ensure the availability of the data required to follow up the management of rolling stock maintenance and informed decision-making regarding the management of its fleet of vehicles.

3.7.3. Management Reports

Vehicle maintenance management is based on analyses and indicators that help guide decision-making on the use of vehicles, the maintenance plan, and vehicle fleet management (e.g., purchase, replacement, discarding).

The SMRA has few tools or management reports to ensure the follow-up of maintenance costs or to identify the distribution of costs by activity (e.g., preventative maintenance, inspections and repairs). Given the quality issue of the data available in MIR (absent or incomplete), the reports produced are not used on a regular basis. The persons in charge that we met confirmed that they had little clarity about the management of the vehicle fleet maintenance, both at the workshop level and at the management level. In addition, there is a lack of reports that would enable follow-up of the implementation of Preventative Maintenance Programs and PMP inspections and the monitoring of compliance with the regulation governing HV. Monitoring tools and alignment with clients were also lacking.

As for performance indicators or dashboards on this sphere of activity that could touch on the productivity of the workshops or the rate of abnormal breakdowns, these have not been produced since January 2020. Although present for the years 2018 and 2019, these indicators (e.g., average time that vehicles were out-of-service and their maintenance and repair costs) were considered complex and unreliable and were therefore rarely used. The absence of appropriate management indicators prevents the persons in charge of the workshop to be proactive in identifying problems, which contributes to reactive management and failure to provide a comprehensive view of this sphere of activity. The SMRA plans to put in place new indicators that will allow better follow-up of its operations.

In short, the absence of performance indicators, quality controls, and results-oriented measures are the shortcomings that we found. Various tools need to be put in place, such as follow-up reports, analyses and management indicators, to help identify operational or management problems and to remedy them, where appropriate.

3.7.3.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place performance indicators and prepare appropriate management reports to follow up and evaluate the maintenance activities of the rolling stock, to ensure informed decision-making regarding the management of its fleet of vehicles.

3.8. Accountability

Best practices would have the objectives of a department stated in each of the directions at the start of the year to set results-oriented targets, validate their progress during the year, and make the necessary adjustments. The SMRA defined its objectives for 2018, 2019 and 2020, some of which are managed by the mechanical workshops. These concern the availability of parts in eight workshops (including Plateau-Mont-Royal and Sud-Ouest), the organization of 20 workshops based on the 5S method,⁴² and the Clé Verte⁴³ environmental certification of 5 workshops.

No objective was established, however, to evaluate the performance of the workshops (e.g., availability of vehicles, implementation of planned interventions and management of maintenance costs).

The SMRA produced an accountability report for the Commission sur les finances et l'administration for the years 2018, 2019 and 2020. This report dealt primarily with budget trends and costs but failed to include any mention of the operational management of the workshops. Three MBNC indicators⁴⁴ (e.g., rate charged for one hour of maintenance or repair of municipal vehicles) were presented for comparison purposes with other Canadian cities, as well as new indicators put in place in 2019 (e.g., direct operating cost and rate of achievement of the weekly planning process).

However, this report omitted the follow-up of objectives and the various initiatives tied to the centralization, including those related to cost reductions of activities in the workshops and the increased offer of services (e.g., number of workshops and rejuvenation of the vehicles).

At the end of the two years of centralization, a report was produced by the SMRA, in September 2018, outlining the initiatives taken without presenting the level of progress or attainment of the objectives.

⁴² The 5S method, a well-known Japanese management philosophy, is one of the most popular methods for creating a functional, streamlined work environment. The 5Ss represent 5 practices: Sort, Set in Order, Shine, Standardize, and Sustain.

⁴³ The Clé Verte environmental program is a voluntary Québec environmental certification program for automotive service shops (e.g., cars and light- or heavy-duty trucks). The program is based on six criteria: residual hazardous materials management, residual non-hazardous materials management, post-consumer waste management, facility and procedure management, service area and parking space maintenance, and employee awareness. Various compliance elements must be demonstrated for each of these criteria.

⁴⁴ The Municipal Benchmarking Network Canada (MBNC) reviews nearly 500 performance indicators and statistical data and compares, among other things, the efficiency of the services rendered to the citizens of the 17 member cities. The MBNC's benchmarking process enables a relevant comparison of Montréal with three other cities, Calgary, Toronto and Winnipeg.

Given the scope of the expenditures attributable to the Direction des ateliers mécaniques, which represents about 60% of the SMRA's budget (more than \$100M), and the importance of the shortcomings observed, there is reason to question the completeness of the accountability report.

3.8.A. Recommendation

We recommend that the Service du matériel roulant et des ateliers put in place periodic accountability mechanisms on the management of rolling stock maintenance, based on objectives that will have been defined in measurable terms and on complete and reliable data, to enable informed decision-making by the authorities..

4. Conclusion

The purpose of centralizing activities related to the rolling stock was to improve the efficacy of the management of the Ville de Montréal's (the "City's") fleet of vehicles and equipment. The objectives of this centralization were to reduce the obsolescence of the fleet and increase its reliability and availability to improve the delivery of services and reduce maintenance and repair costs.

The challenge for the Service du matériel roulant et des ateliers (SMRA), operationally, is to ensure the proper operation and availability of a fleet of more than 8,200 vehicles, for a municipal body composed of 19 boroughs and several central departments tasked with delivering a multitude of services to citizens. In terms of compliance, 17% of the fleet of heavy vehicles (HVs) is subject to legal provisions related to both their use and maintenance.

Managing the maintenance of the City's rolling stock relies on the Gestion de la maintenance assistée par ordinateur (GMAO) system, where the information about the vehicle fleet is stored. We found that this data was not exhaustive for the entire vehicle fleet, which does not ensure efficient management of the mechanical workshops, the supply of products needed for interventions, or warranty claims.

Our audit showed that vehicles and equipment were not programmed for preventative maintenance uniformly and in accordance with the manufacturers' recommendations. Regarding HVs that are subject to the *Act respecting owners, operators and drivers of heavy vehicles* (ODHV Act), the SMRA was unable to demonstrate that the Preventative Maintenance Program inspections (PMP inspections) were scheduled at the required frequencies. While the schedule of these interventions was drawn up and communicated, it failed to take into consideration the capacity of the workshops and was not aligned with the needs of the business units to ensure that the rolling stock was available for their operations.

The absence of procedures or work methods leads to inconsistent practices between the workshops. No parameter had been established at the SMRA as a baseline to estimate the time required for the interventions.

Circle checks (CCs) were not performed systematically on the HVs prior to their use, and the defects observed were not systematically communicated to the SMRA. These situations constitute non-compliance with the legal provisions by the users of HVs (the business units and drivers).

Our audit revealed backlogs in the preventative maintenance, while PMP inspections on HVs were non-compliant in terms of frequency of execution and documentation. There is no evidence of repairs for a significant proportion of the defects highlighted during CCs and PMP inspections. Some HVs were in service although no evidence was shown that their defects had been repaired, adding to the cases of non-compliance that could have serious consequences for the City.

There is no coordination mechanisms between the SMRA and the business units regarding the requisition of vehicles for maintenance and PMP inspections. Add to that an almost total absence of follow-up mechanisms documented and shared with the business units regarding the status of out-of-service vehicles in the workshops and the resumption of operations.

Alignment with the Service de l'approvisionnement (SA) to ensure the timely availability of the parts needed for the work to be done in the mechanical workshops is not optimal and leads to procurement frequently in reactive mode. This situation results from the fact that needs for parts and materials for the planned interventions were not communicated to the SA by the workshops with sufficient notice, and that the SA was not necessarily informed of the decisions of the SMRA regarding the management of the vehicle fleet.

The history of work done on the vehicles was incomplete and not adequately documented, which affected the completeness and reliability of the data on the costs of the work. It is common practice for repairs to be done without a documented work order.

The SMRA has few tools or management reports to ensure the follow-up of maintenance costs. The absence of objectives and appropriate management indicators did not allow the persons in charge to evaluate the performance of their operations.

While an accounting is done annually by the SMRA, it made no mention of the operational management of the workshops and omitted the follow-up of the objectives related to the various initiatives arising out of the centralization, especially those regarding cost reductions for the activities in the mechanical workshops.

In short, the findings of our audit led us to conclude that the maintenance management activities related to vehicles and equipment are not adequately planned, performed and followed up, nor is there appropriate control exercised on costs.

Based on these findings, we recommended that the City:

- Ensure control of the completeness and accuracy of the data on the vehicles to support interventions;
- Put in place mechanisms to ensure that all vehicles are subjected to appropriate preventative maintenance programs, at proper intervals, as well as to PMP inspections, according to the legal provisions;
- Establish integrated planning of all interventions with the operational requirements of the business units and the capacity of its workshops;
- Develop procedures and work methods to encourage consistent and effective activities between workshops;
- Put in place control mechanisms so that CCs on HVs are systematically performed and documented as stated in the regulation and that the defects observed are reported to the SMRA;
- Ensure the implementation of preventative maintenance on the entire vehicle fleet;
- Put in place mechanisms so that the implementation of PMP inspections and the documentation of the interventions are done in compliance with the regulations that apply to owners and operators of HVs, and that only vehicles with the right to circulate are used for the operations of the business units;

- Ensure that all work done on the vehicles is properly entered in the GMAO system, so that there is a complete history and data on the associated costs;
- Develop and put in place consistent coordination and follow-up methods between the SMRA and the business units for the requisition and follow-up of out-of-service vehicles in the workshops;
- Establish product forecasts and consumption analyses required for the management of vehicle maintenance to ensure that they are available in a timely manner;
- Establish objectives and corresponding performance indicators to evaluate maintenance management and enable informed decision-making;
- Put in place regular accountability mechanisms on maintenance management and on the degree to which the expected benefits from the centralization of the activities related to the rolling stock are being realized.

Just as one expects that a car dealership will keep a history of the maintenance done on one's personal vehicle and will know what to inspect when maintaining the vehicle based on its age or use, business units must expect to receive similar service from the SMRA. The lack of a guarantee of such service could compromise the very ability of the business units to conduct their own activities. In addition, given the presence of HVs on city streets, compliance with the regulation regarding the maintenance and inspection of these vehicles is paramount to ensuring the adequate and safe delivery of services to citizens.

5. Appendices

5.1. Objectives and Evaluation Criteria

Objectives

To ensure that the management of vehicle and equipment maintenance activities is adequately planned, performed and followed up to ensure that business units can deliver their services as planned, and that appropriate control is exercised on costs.

Evaluation criteria

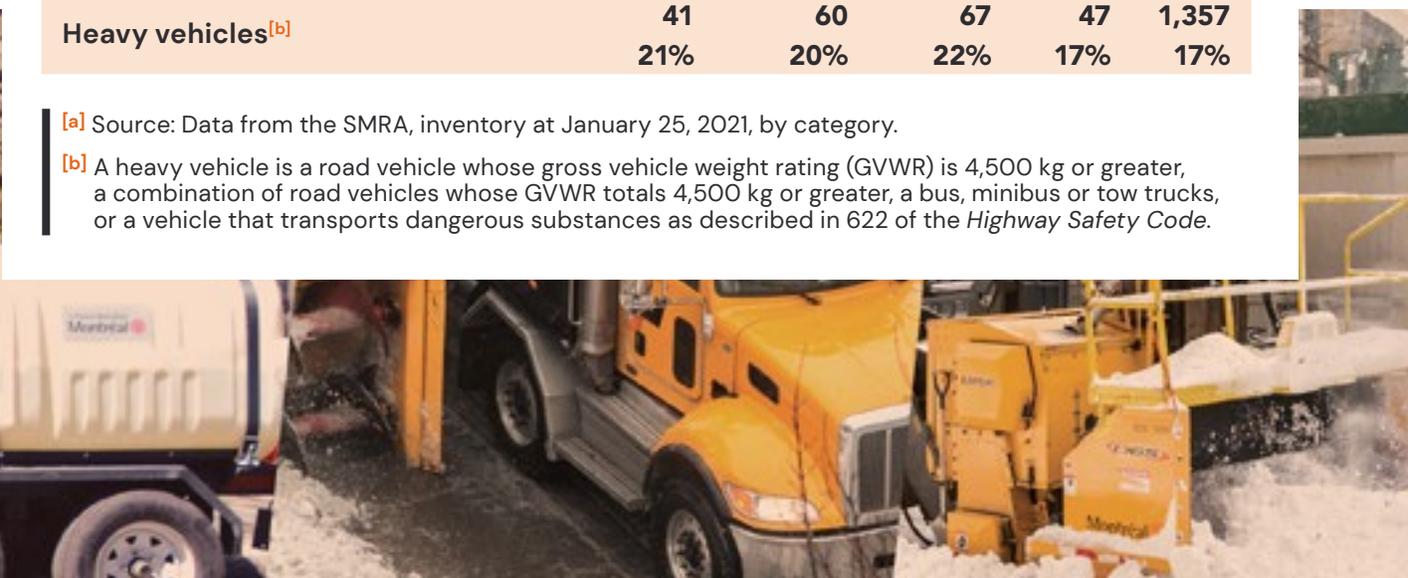
- The roles and responsibilities are clearly defined and communicated for the management of vehicle and equipment maintenance.
- Each vehicle has an updated data sheet and complete, structured and documented intervention history.
- Inventory management is performed in compliance with the City's directives and frameworks to ensure the availability of parts and supplies in a timely manner.
- Maintenance activities are adequately planned by the Service du matériel roulant et des ateliers.
- A follow-up of the maintenance activities is performed by the Service du matériel roulant et des ateliers to ensure compliance with regulations and planned timelines.
- Control mechanisms are in place to ensure the reliability of the data regarding maintenance costs, and these costs are analyzed for the purposes of timely management.
- Accountability mechanisms are in place to ensure informed and timely decision-making.

5.2. Picture of the Fleet of Vehicles and Equipment by Category at January 25, 2021

Vehicle category ^[a]	Exemples	Ateliers visés				Total City
		Montréal-Nord	Plateau-Mont-Royal	Saint-Laurent	Sud-Ouest	
A. Light automobiles	Compact car 6-cylinder multi segment	21	35	27	30	2,290
B. Light trucks	Van Crew-cab pickup	31	51	40	38	1,252
C. Heavy trucks	Dump truck Sewer cleaning truck	39	56	61	53	1,318
D. Light tool vehicles	Tractor	6	14	10	20	331
E. Heavy tool vehicles	Wheel loader Ice resurfacers	28	32	53	38	769
F. Other light equipment	Sidewalk salt spreader Snowmobile	60	78	95	72	1,768
G. Other heavy equipment	Theatre trailer Modular dump truck	14	29	21	30	427
Total		199	295	307	281	8,155
Heavy vehicles^[b]		41	60	67	47	1,357
		21%	20%	22%	17%	17%

^[a] Source: Data from the SMRA, inventory at January 25, 2021, by category.

^[b] A heavy vehicle is a road vehicle whose gross vehicle weight rating (GVWR) is 4,500 kg or greater, a combination of road vehicles whose GVWR totals 4,500 kg or greater, a bus, minibus or tow trucks, or a vehicle that transports dangerous substances as described in 622 of the *Highway Safety Code*.





3.6.

Information Technology Risk Management

February 9, 2021

2020 ANNUAL REPORT

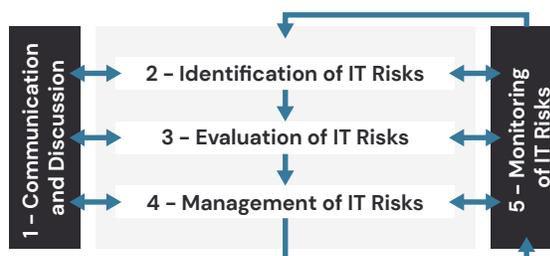
Auditor General of the Ville de Montréal

Information Technology Risk Management

Information technology (IT) risk management is an ongoing process that generally involves the business units (the owners of most of the information assets) and the Service des technologies de l'information (STI).

The following diagram illustrates the life cycle of IT risk management:

Background



An IT risk is an event involving IT that could have a negative impact on the Ville de Montréal (the City), such as the loss or theft of confidential data, the unavailability of important applications, non-compliance with laws and regulations or financial losses following a cyberattack (e.g., ransomware).

Purpose of the Audit

To evaluate the processes, tools and controls put in place by the STI to effectively manage the City's IT risks and thus adequately protect itself against various events that could negatively affect the City's operations and critical services.

Results

The STI set up a team to support the City in its management of technological risks. This team made significant progress in this area. However, we concluded that the City does not effectively manage IT risks.

Indeed, the governance surrounding IT risk management is not sufficiently supported by comprehensive, updated and approved documentation that is distributed to the stakeholders and implemented by them.

The STI does not have the necessary human or technological resources to adequately respond to its IT risk management service offer.

Although the mechanism used to detect technological risks is documented in the *Processus de gestion des risques TI*, it has not been implemented.

This situation increases the likelihood that the quality of IT risk management will be very uneven across business units and stakeholders, and that major IT risks will not be adequately identified, managed or tracked.

Main Findings

IT Risk Governance and Management

- The STI has developed frameworks, including a *Modèle de gouvernance en sécurité de l'information*, a policy, a directive and various processes in relation to IT risk management. Nevertheless, some of these documents are not up to date, while others are being developed or have not yet been approved or distributed.
- IT risk monitoring and accountability reporting as well as the production of IT risk indicators and dashboards provided for in the *Processus de gestion des risques TI* have not been implemented.
- The STI's current quality review process is not documented or systematically carried out by the stakeholders.

Adequacy of Resources

- The STI does not have the necessary human or technological resources to adequately respond to its IT risk management service offer.

Detection of Major Technological Risks

- The mechanism used to detect technological risks is documented in the *Processus de gestion des risques TI*. However, as this process has not been finalized, approved or distributed to the stakeholders, it has yet to be implemented.

Analysis of IT Risks

- The STI has developed a process, tools and templates to facilitate the analysis of IT risks. However, they have not been adequately completed and the overall quality of the information collected varies from one analysis to the next.

Evaluation of IT Risk Management Performance

- Risk management performance is not formally evaluated on a regular basis or reported to the Direction générale of the City. This requirement is nevertheless stipulated in the *Politique de sécurité de l'information*.

In addition to these results, we have made various recommendations to the business units, which are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms



- GGRTI** Gouvernance et gestion des risques TI
- IT** Information technology
- STI** Service des technologies de l'information



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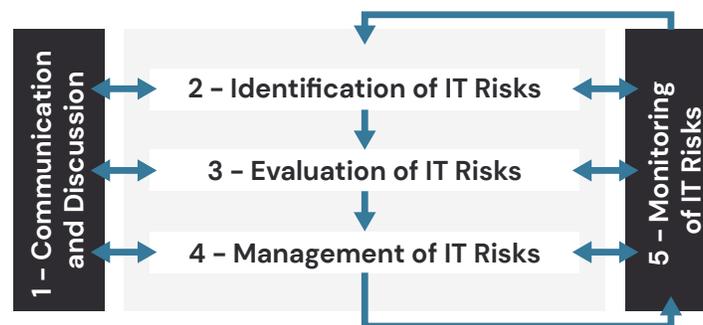
1. Background

Information technology (IT) risk management is an ongoing process that generally involves the business units (the owners of most of the information assets) and the Service des technologies de l'information (STI).

It is important for the Ville de Montréal (the City) to effectively manage its IT risks, considering that:

- the City has close to 300 IT applications¹ that operate in a variety of constantly evolving technological environments;
- the development, maintenance and operation of these systems require the contribution of more than 600 employees² of the STI;
- the City's IT operating budget will total over \$100 million³ in 2021;
- all users, both employees and citizens, expect these systems to be efficient, secure and available.

The following diagram illustrates the life cycle of IT risk management:



An IT risk is an event involving IT that could have a negative impact on the City, such as the loss or theft of confidential data, the unavailability of important applications, non-compliance with laws and regulations or financial losses following a cyberattack (e.g., ransomware).

¹ According to a list of information assets obtained from the Service des technologies de l'information on October 22, 2020.

² Source: 2019–2021 Three-Year Capital Expenditure Program.

³ Budget of the Ville de Montréal – 2021.

In order to protect itself against the advent of such negative effects, the City must regularly and systematically conduct IT risk analysis, especially during events that could potentially trigger such IT risks. For example:

- significant changes made to a critical application;
- the launch of an IT project involving confidential data;
- the addition or significant modification of technological equipment;
- the addition of a major IT supplier;
- a major IT incident that occurred in the City, or in another organization but that could occur in the City;
- the discovery of a significant vulnerability linked to one of the City's critical systems.

Following the analysis of these IT risks, an action plan must be developed and implemented by the business units responsible in order to mitigate the most significant risks. Finally, the progress of these action plans should be regularly monitored and formally reported to the stakeholders.

The following are the main types of IT risks that can be assessed in these analysis:

- the disclosure of confidential information;
- the unavailability of technological material or IT applications;
- non-compliance with the City's laws and regulations;
- the inability to pursue business operations;
- a natural disaster;
- the unavailability or default of a supplier;
- the manipulation of data;
- a loss of performance.

Reporting to the STI, the Gouvernance et gestion des risques TI (GGRTI) Division is made up of five security advisers, and its mission includes notably supporting the City's stakeholders in their IT risk management.

The services offered by the GGRTI Division include the production of the following security deliverables: a security advisory, analysis of security requirements, impact analysis, IT risk analysis and the coordination of computer intrusion (hacking) tests. This includes monitoring the most significant IT risks as well as regular reporting on these IT risks.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act* (CTA), we completed an audit mission on IT risk management. We performed this mission in accordance with the *Canadian Standard on Assurance Engagements* (CSAE) 3001 described in the *CPA Canada Handbook – Assurance*.

The purpose of this audit was to evaluate the processes, tools and controls put in place by the STI to effectively manage the City's IT risks and thus adequately protect itself against various events that could negatively affect the City's operations and critical services.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purpose of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control* (CSQC) 1 from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit focused on the period from July to December 2020. Our work consisted of conducting interviews with employees, reviewing various documents and conducting surveys that we deemed appropriate to gather relevant supporting information. We also took into account information that was sent to us up to February 2021.

Upon completing our audit, we submitted a draft audit report to the managers of each audited business unit as well as to each of the business units concerned to obtain action plans and timelines for implementing them.

3. Audit Results

3.1. Information Technology Risk Governance and Management

3.1.1. Strategy, Policy and Management Framework

The stakeholders involved in sound IT risk management must have at their disposal the necessary strategic frameworks to understand the City's IT risk management orientations and thus exercise the roles and responsibilities expected of them.

No single document exists that directly presents the City's IT risk management strategy. Indeed, we noted that this strategy is partially presented in the following four documents:

- the *Modèle de gouvernance en sécurité de l'information*;
- the *Politique de sécurité de l'information*;
- the *Directive sur la gestion des risques TI*;
- the *Processus de gestion des risques TI*.

Modèle de gouvernance en sécurité de l'information

This document sets out the responsibilities assigned to the business units (1st line of defence), the chief information security officer and the STI (2nd line of defence) and the comptroller general (3rd line of defence) with respect to information security and IT risk management.

Considering that this model assigns important responsibilities to several of the City's business units, it is important that it be formally communicated by the Direction générale to all stakeholders so that they adhere to it and prioritize the implementation of this model.

We found that such communication has not been formally carried out. This leads to the risk of low stakeholder buy-in and incomplete assumption of responsibility for the activities required to adequately manage IT risks within the City.

Politique de sécurité de l'information

This policy (IT security policy) sets out a number of frameworks for IT risk management at the City, including the following:

- the person responsible for an information asset must manage the risks of that asset;
- the *Comité de sécurité de l'information* must regularly assess risk management performance and report on it to the Direction générale.

However, this policy was last updated in 2006. It is imperative that the content of this policy be quickly reviewed to ensure that it responds to current reality, particularly with respect to aspects involving IT risk management.

Directive sur la gestion des risques des technologies de l'information

This directive (IT risk management) was presented to the *Comité de sécurité de l'information* in January 2020. Its main objective is to dictate a common vision and direction for IT risk management within the City. It is our opinion that it adequately covers the main elements expected in this field.

Indeed, it presents the following guiding principles:

- Associating IT risk management with the achievement of the City's strategic or business objectives;
- Aligning IT risk management with the City's integrated risk management;
- Balancing the costs and benefits of IT risk management;
- Promoting adequate communication on IT risks;
- Establishing an organizational framework oriented towards effective IT risk management;
- Integrating the *Processus de gestion des risques TI* into the City's daily operations.

However, this directive has not been approved by the Direction générale, nor has it been distributed to stakeholders or implemented. As a result, this leads to the risk of a non-uniform approach to IT risk management.

Processus de gestion des risques des technologies de l'information

The documentation surrounding the *Processus de gestion des risques TI* has not been finalized. As such, it has not been approved or distributed to the stakeholders.

This situation leads to the risk of a non-uniform approach to IT risk management, as well as a failure to respect the stakeholders' roles and responsibilities when carrying out activities related to IT risk management.

Alignment with Integrated Risk Management

IT risk management is a subset of the City's integrated risk management. Sound practices call for IT risk management to be linked to the frameworks developed and distributed by the sector responsible for integrated risk management in order to ensure consistent and efficient actions.

Since the City's project to implement integrated risk management is currently under way, it is possible that guiding principles for IT risk management (e.g., risk appetite and tolerance, impact and probability thresholds, risk level metrics) may differ from those later defined by integrated risk management.

In the event of such discrepancies, it will not be possible to adequately compare IT risk assessments with the City's other risks (i.e., a high-level IT risk may be presented as less significant than an "average" level integrated risk). As a result, the City would not be able to adequately prioritize its IT risk management actions.

3.1.1.A. Recommendation

We recommend that the Direction générale:

- ensure consistency and alignment of integrated risk management with information technology risk management, particularly with respect to risk appetite and tolerance, impact and probability thresholds and risk-level metrics;
- approve the *Directive sur la gestion des risques des technologies de l'information*;
- ensure that the directive is distributed to the business units and implemented by them;
- formally communicate its approval of and commitment to the information security governance model to the business units so that they subscribe to it and prioritize its implementation.

3.1.1.B. Recommendation

We recommend that the Service des technologies de l'information:

- upgrade and distribute the *Politique de sécurité de l'information*;
- finalize the documentation surrounding the *Processus de gestion des risques des technologies de l'information* and ensure it is distributed and that the business units subscribe to it.

3.1.2. Sharing of Roles and Responsibilities

The sharing of the stakeholders' roles and responsibilities with respect to the City's IT risk management is essentially presented in the following four documents:

- the *Modèle de gouvernance en sécurité de l'information*;
- the *Politique de sécurité de l'information*;
- the *Directive sur la gestion des risques TI*;
- the *Processus de gestion des risques TI*.

Modèle de gouvernance en sécurité de l'information

This governance model was presented to and adopted by the *Comité de sécurité de l'information* and the *Direction générale*. It sets out the responsibilities of business units, the chief information security officer, the STI and the comptroller general with respect to information security and IT risk management.

Politique de sécurité de l'information

This policy specifies certain responsibilities assigned to the business units as well as to the *Comité de sécurité de l'information* with respect to IT risk management.

Directive sur la gestion des risques des technologies de l'information

This directive assigns responsibilities for IT risk management to a number of stakeholders, including:

- the *Comité de gestion de la Direction générale*;
- the *Comité de sécurité de l'information*;
- the comptroller general;
- the chief information security officer;
- the business units.

Processus de gestion des risques des technologies de l'information

This process assigns certain responsibilities to the comptroller general, the STI and the business units.

We note that not all roles and responsibilities have been formalized. Indeed, although several roles and responsibilities are adequately defined within these four documents, not all of them have been completed, approved or distributed to the stakeholders (see section 3.1.1.).

As a result, some tasks may not be completed and others may have more than one person responsible for them. Such a situation can have a major impact on the governance and quality of IT risk management.

3.1.2.A. Recommendation

We recommend that the Service des technologies de l'information:

- complete the documentation of the roles and responsibilities of the stakeholders involved in the *Processus de gestion des risques des technologies de l'information* following approval of the related directive;
- ensure that these roles and responsibilities are distributed and understood.

3.1.3. Procedures, Guides and Tools

Various IT risk management procedures, guides and tools have been developed by the STI to enable stakeholders to complete quality IT risk analysis. In particular:

- a *Processus de gestion des risques TI*;
- a template to define the parameters of risk analysis (including risk, impact and probability levels, types of risks to be assessed, risk tolerance thresholds);
- templates related to risk analysis requests, acceptances, drafting of risk assessment reports, another template if a risk is waived.

Processus de gestion des risques des technologies de l'information

As mentioned in section 3.1.1. of this report, this process has not been finalized, approved or distributed to the stakeholders.

This process provides that the STI is to regularly monitor IT risks. Based on the IT risk register, the STI must ensure that the City's IT risks are under control and that the actions taken to control them are coordinated and consistent. To this effect, the STI must implement indicators in order to monitor the four states of risk it has defined, namely:

- non-critical;
- under evaluation;
- being processed; or
- accepted by the City as critical.

These indicators must be used to improve – qualitatively or quantitatively – the City's IT risk management system. They must also feed various IT risk dashboards.

The resulting indicators and dashboards should be regularly presented to the stakeholders and at each meeting of the *Comité de sécurité de l'information*.

Following our work, we noted that the production of indicators and dashboards and the monitoring and reporting on IT risks are not formally and regularly carried out.

As a result, there is a possibility that significant IT risks may not receive the required attention from the stakeholders and that the City may be exposed, without its knowledge, to significant events such as critical system failures or cyberattacks that threaten the integrity and confidentiality of data held by the City.

Use of Templates in Risk Analysis

The STI has developed templates to facilitate the IT risk analysis.

We noted that these templates are relatively complete. However, they have not been finalized and therefore have not been formally approved or distributed to the stakeholders. As a result, the quality of IT risk analysis may be uneven and the results may fail to reveal certain significant IT risks.

In order to evaluate the extent to which these templates are adequately used by the stakeholders during IT risk analysis, we selected a sample of six IT projects out of the 50 that had been overseen by a security adviser from the GGRTI Division. We then analyzed the documents produced as a result of this oversight and met with the security advisers who coordinated these activities and participated in the production of the required deliverables.

Overall, we noted the following for our sample of six projects:

- three projects included IT risk analysis;
- one project had minor impacts and therefore did not require an IT risk analysis;
- two projects were the subject of impact analysis, but the risk analysis had not yet been carried out.

The three IT risk analysis evaluated were carried out using the template provided for this purpose, and the result was approved by the stakeholders. However, we noted that these analysis were often incomplete (i.e., no details of the controls in place, no risk treatment, no action plan or timeline to complete an action plan).

In addition, certain other templates are rarely used (e.g., the risk analysis request template, the risk acceptance template).

As a result, the fact that IT risk analysis are not fully documented and that certain templates are not used leads to the risk that the quality of IT risk analysis will vary from one analysis to the next. In turn, this could lead to the materialization of significant risks that were incorrectly assessed and not addressed. This calls for the implementation of systematic quality reviews of these IT risk analysis.

Quality Review

We noted that quality reviews are sometimes performed by STI resources following the production of various deliverables related to IT risk management.

However, this activity is not supported by formal documentation, it is not carried out systematically and it does not cover all STI activities and deliverables (i.e., the extent to which all expected templates have been adequately completed, approved and distributed).

It is therefore possible that the quality review may not detect non-compliance with certain items expected from the *Processus de gestion des risques TI* (e.g., the use of expected templates, obtaining required approvals, the production of requested deliverables, compliance with different stages in the process). This situation could result in an incomplete IT risk analysis or an analysis that does not meet expectations of stakeholders.

3.1.3.A. Recommendation

We recommend that the Service des technologies de l'information:

- implement recurring monitoring of information technology risks and report them to the stakeholders;
- define and implement information technology risk indicators and dashboards and present them regularly to the stakeholders;
- approve and distribute the information technology risk analysis templates developed;
- document and implement a systematic quality review process for information technology risk analysis that covers all deliverables and expected activities.

3.2. Adequacy of Resources

While responsibility for managing IT risks rests with the City's business units, the STI is responsible for a number of activities related to IT risk management, including:

- developing and distributing IT risk management frameworks;
- supporting business units in managing their IT risks;
- producing various deliverables for business units related to IT risk management (e.g., the security advisory, the analysis of security requirements, impact analysis, IT risk analysis, vulnerability assessments, security tests);
- maintaining and updating the IT risk register;
- monitoring significant IT risks and reporting on them to the stakeholders.

In this respect, we note that the five security advisers assigned to these activities only allow the STI to carry out part of these activities. Indeed, as noted during our audit, here are the important points:

- frameworks are neither completed, approved nor distributed to the stakeholders;
- only a portion of IT projects are subject to IT risk analysis;
- few IT risk analysis are carried out in a context other than that of an IT project;
- the IT risk register is updated sporadically rather than systematically;
- there is no systematic monitoring and reporting of IT risks.

In addition, other IT risk management activities included in the STI's service offering are currently not carried out, such as the systematic development and distribution of performance and IT risk indicators, the development of an IT risk awareness program, and third-party IT risk management.

Thus, we note that the STI does not have sufficient human resources to adequately carry out all of these important activities. Such a situation increases the likelihood that significant risks will not be managed adequately, possibly resulting in a loss of availability of critical systems, theft of confidential data or the occurrence of major cyberattacks.

Furthermore, the main tools used by the STI to support business units in managing their IT risks are limited to office software and a dashboard generator. Such tools do not foster optimal integrated IT risk management and require IT risks to be manually collected, updated, monitored and reported.

Yet there are integrated technological tools on the market that facilitate:

- the compilation of IT risk management activities;
- the systematic monitoring of these IT risks;
- effective reporting of IT risks to the stakeholders.

As a result, several manual entries have to be made, which increases the risk of errors, omissions and efficiency losses.

3.2.A. Recommendation

We recommend that the Direction générale ensure that the Service des technologies de l'information obtain the human and technological resources required to adequately respond to its current offer of information technology risk management services.

3.3. Detection of Major Technological Risks

In order for the City to be adequately protected against the advent of significant events, such as the failure of an obsolete system leading to the unavailability of critical applications or the loss of data following a cyberattack, the City must implement an effective mechanism to allow for the timely detection of significant IT risks.

This IT risk detection mechanism is presented in the document titled "*Processus de gestion des risques TI*." It consists of assigning to the business units, IT project teams and the IT operations team responsibility for determining, in light of the City's priorities, the operations that require an IT risk analysis.

When one of these stakeholders decides that it is relevant to conduct an IT risk analysis, it will contact the STI's GGRTI Division for support.

In addition, in order to guide these stakeholders, the process presents 12 events that can lead to the completion of IT risk analysis, namely:

- the integration of a new IT product or service;
- the development of an IT system;
- the evolving needs of citizens;
- new business requirements;
- changes in the operational environment;
- work restructuring;
- changing strategic and/or organizational orientations;

- the detection of emerging threats;
- the identification of new vulnerabilities;
- the development and/or maintenance of the IT infrastructure;
- the use of a new IT tool/functionality;
- an update to a patch.

For this approach to identifying IT risks to work effectively, we believe that these stakeholders must:

- have received the required documentation related to this process;
- be fully aware of their roles and responsibilities with respect to IT risk management;
- have demonstrated their formal acceptance of these responsibilities;
- have been trained to effectively identify their IT risks and adequately apply the *Processus de gestion des risques TI*;
- communicate regularly with a dedicated STI IT risk management resource to inform them of any developments regarding IT risks (i.e., new risks, the development of action plans to mitigate significant risks, a change in the importance of a risk).

We noted that these five prerequisites are not in place. Indeed, as mentioned in section 3.1.1, the documentation surrounding the *Processus de gestion des risques TI* has not been finalized. As such, it has not been approved, distributed or applied by the stakeholders concerned. As a result, activities related to awareness-raising, buy-in, training and regular communication with stakeholders have also not been completed.

Consequently, in the absence of an effective detection process, significant IT risks would not receive the required attention, which could lead to critical situations such as the unavailability of systems, cyberattacks possibly resulting in the theft of confidential data, or the loss of integrity of important data.

3.3.A. Recommendation

Subject to recommendation 3.1.1.A. for the part concerning the *Processus de gestion des risques des technologies de l'information*, we recommend that the Service des technologies de l'information:

- set up a training and awareness-raising program for the stakeholders concerned, particularly with regard to identifying information technology risks;
- provide for an effective mechanism to ensure that regular communication is maintained between the Service des technologies de l'information and the stakeholders concerned in order to monitor how their information technology risks are evolving.

3.4. Analysis of Technological Risks

The mechanism used to analyze technological risks is documented in the *Processus de gestion des risques TI*. The STI has developed various templates to facilitate the analysis of IT risks by the stakeholders.

However, as indicated in section 3.1.1, the *Processus de gestion des risques TI* has not been finalized, approved or distributed. This leads to the risk of a non-uniform approach to IT risk analysis.

Furthermore, section 3.1.3. mentions that these templates have not been approved or formally distributed. This leads to the risk that the quality of IT risk analysis may vary from one analysis to the next, which could lead to significant risks being incorrectly assessed and not addressed.

In order to validate the quality of the IT risk analysis process, effectiveness testing was carried out on a sample of IT risk analysis (see section 3.1.3.). The results of these tests show that the quality of these analysis is uneven, which calls for the implementation of a regular quality review of all stages of the *Processus de gestion des risques TI*.

No further recommendations are required, as our findings are already addressed in recommendations 3.1.1.A., and 3.1.3.A.

3.5. Performance Evaluation of Information Technology Risk Management

Pursuant to the *Politique de sécurité de l'information*, IT risk management performance must be regularly evaluated by the *Comité de sécurité de l'information* and the results of this evaluation must be reported to the Direction générale.

Such a performance evaluation ensures that IT risk management meets the City's expectations and evolves regularly to adapt to frequent technological changes.

We noted that the *Comité de sécurité de l'information* does not formally undertake this activity on a regular basis. Consequently, it is not possible to ensure that IT risks are managed in accordance with the City's strategic orientations.

3.5.A. Recommendation

Subject to the implementation of the other recommendations presented in this report, we recommend that the Service des technologies de l'information formally evaluate the performance of information technology risk management on a regular basis and present the results of this evaluation to the Direction générale.

4. Conclusion

The Service des technologies de l'information (STI) set up a team responsible for supporting the Ville de Montréal (the City) in managing its technological risks. This team made significant progress in this area. However, we have reached the conclusion that the City does not effectively manage the information technology (IT) risks to which it is exposed.

Indeed, based on our audit, the governance surrounding IT risk management is not sufficiently supported by comprehensive, up to date and approved documentation that is distributed to the stakeholders and implemented by them. Without such documentation, those stakeholders involved in IT risk management do not have all the information they need to effectively and consistently manage the IT risks in their respective sectors of activity.

Furthermore, the mechanism used to detect IT risks is documented in the *Processus de gestion des risques TI*. However, as this process has not been finalized, approved or distributed to the stakeholders, it has yet to be implemented. As a result, it is possible that events involving significant IT risks will not be evaluated and that this may result in service breakdowns, system failures or the loss of confidential data.

In order to be able to offer its IT risk management services, the STI should ensure that it has the necessary human and technological resources. We note that these resources are currently insufficient. As a result, certain activities provided pursuant to its service offering are not carried out or only partially carried out, which exposes the City to additional risks.

This lack of formal supervision and of human and technological resources increases the likelihood that:

- the quality of IT risk management will be very uneven from one business unit to the next and from one stakeholder to the next;
- significant IT risks will not be adequately identified, managed and tracked.

More specifically, here are the details according to the following evaluation criteria:

1. Evaluation Criterion – Information Technology Governance and Risk Management

The STI has developed frameworks, including a *Modèle de gouvernance en sécurité de l'information*, a policy, a directive and various processes in relation to IT risk management. However, some of these documents must be updated, while others are being developed or have not yet been approved or distributed. As a result, many of the orientations and strategies contained in these frameworks are not currently being implemented by the stakeholders concerned. In addition, the roles and responsibilities of the stakeholders involved in IT risk management are not all adequately documented within the frameworks.

Procedures, guides and tools, including various templates to facilitate IT risk management, have been developed by the STI. These documents are generally complete and up to date. However, they have not all been approved and distributed to the stakeholders. IT risk monitoring and accountability reporting activities as well as the production of IT risk indicators and dashboards provided for in the *Processus de gestion des risques TI* have not been implemented. Also, the STI's current quality review process has not been documented or systematically implemented by the stakeholders.

2. Evaluation Criterion – Adequacy of Resources

The STI does not have the necessary human or technological resources to adequately respond to its IT risk management service offer.

3. Evaluation Criterion – Detection of Major Technological Risks

A *Processus de gestion des risques TI* is currently being developed. As such, it has not been approved or distributed to the stakeholders. In particular, the process sets out an approach aimed at detecting and addressing significant technological risks. This process requires the active participation of the City's business units. However, several prerequisites will need to be implemented to ensure that it is operational and effective.

4. Evaluation Criterion – Analysis of Technological Risks

The STI has developed a process as well as tools and templates to facilitate the analysis of IT risks. However, they have not been adequately completed and the overall quality of the information collected varies from one analysis to the next.

5. Evaluation Criterion – Periodic Performance Evaluation of Information Technology Risk Management and Accountability to the Stakeholders

Risk management performance is not formally evaluated on a regular basis or reported to the Direction générale of the City, a requirement nevertheless stipulated in the *Politique de sécurité de l'information*.

5. Appendix

5.1. Objective and Evaluation Criteria

Objective

To evaluate the processes, tools and controls put in place by the Service des technologies de l'information to effectively manage the information technology (IT) risks to which the Ville de Montréal (the City) is exposed and thus adequately protect itself against various events that could negatively affect the City's operations and critical services.

Evaluation Criteria

We based our audit on the following evaluation criteria divided into five parts:

1. Information Technology Governance and Risk Management

- 1.1. There exists a strategy, policies and a specific management framework related to the City's IT risk management. These documents are complete, up to date, formally approved and distributed to the stakeholders, who implement them.
- 1.2. The roles and responsibilities of the stakeholders involved in managing the City's IT risks are documented, complete, up to date, formally distributed to the stakeholders and implemented by them.
- 1.3. Procedures, guides and tools (including a risk taxonomy and its risk tolerance level) have been developed to facilitate IT risk management. These tools are complete, up to date, formally distributed to the stakeholders and implemented by them.

2. Adequacy of Resources

Sufficient and adequate resources are in place to implement IT risk management that meets sound industry practices.

3. Detection of Major Technological Risks

A process is in place to effectively detect and address major technological risks. This process includes, in particular, systematic monitoring of the following:

- emerging risks;
- security incidents;
- risks related to new IT projects;
- major technological changes.

4. Analysis of Technological Risks

The IT risk analysis process includes:

- data collection;
- formal involvement of the stakeholders;
- the determination and justification of the business impact and probability;
- a description of the controls;
- the determination of the residual risk;
- the evaluation of the residual risk relative to risk tolerance;
- processing the risk (i.e., acceptance, refusal, mitigation, transfer);
- where appropriate, a plan to adequately mitigate this risk;
- a formal presentation of the analysis results to the stakeholders and their approval.

5. Periodic Performance Evaluation of Information Technology Risk Management and Accountability to the Stakeholders

Risk management performance is evaluated on a regular basis or reported to the Direction générale of the City.





3.7.

Geomatics Systems Management

March 22, 2021

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

Geomatics Systems Management

Background

Geomatics includes the set of tools and methods used to acquire, represent, analyze and integrate geographic data. The term “geomatics” is derived from the contraction of the words “geography” and “informatics.” Geomatics is closely related to the geographic information that represents an object or phenomenon in space.

Within the Ville de Montréal (the City), the Système d’information géographique et spatiale (SIGS) presents all the geographic data found in the associated systems to which it is connected. Databases and a Serveur d’imagerie containing aerial photos of the territory of the Island of Montréal make up these associated systems.

Geomatics has extremely numerous fields of application, such as surveying, topography, urban planning, snow clearing and traffic signal operations.

Purpose of the Audit

The purpose of this audit was to assess the effectiveness of the control mechanisms in place to ensure the integrity, confidentiality and availability of data in both the SIGS environment and the hosted databases and files to which it is connected.

Results

Overall, we concluded that the City has established several control mechanisms that ensure sound geomatics systems management.

Some improvements are required in the areas of the roles and responsibilities framework associated with management of the SIGS and the owner of this system, management of privileged logical access to geomatics systems, the management framework for SIGS incidents and the IT contingency plan for the SIGS within the City.

Main Findings

Governance

- No roles and responsibilities matrix has been developed for management of the SIGS. The concept of owner has not been defined within the City.

Privileged Logical Access Management

- Although the informal processes are adequate, no procedure for managing privileged logical access to geomatics systems has been developed.
- There is no procedure concerning authentication parameters for the Oracle databases.
- With the exception of the Serveur d'imagerie, the authentication parameters set forth in the City's logical access management standard are not all applied in the geomatics systems.

Resources Specialized in Geomatics

- The stakeholders associated with geomatics systems management have a sufficient number of specialized resources. A succession and reorganization plan exists for the stakeholders involved to ensure appropriate succession. A training program or plan has been defined and training programs are pursued based on needs.

Functional Documentation

- The existing documentation helps ensure sound geomatics systems management. It is reviewed and updated by the appropriate resources and is known to and used by those who require it in accordance with their responsibilities.

Security Configuration

- Management of the SIGS security configuration is adequate.

Incident Management

- No procedure for managing SIGS incidents has been documented. The informal management process is in keeping with sound practices.

Backup Copies Management of Configuration Parameters

- A procedure for managing backup copies has been developed and is in keeping with sound practices.

IT contingency plan for the SIGS

- Although a business impact analysis has been conducted, no IT contingency plan for the SIGS exists within the City.

In addition to these results, we have made various recommendations to the business units, which are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms

ATI	Analyse, traitement et intégration
DB	database
RACI	Responsible, Accountable, Consulted and Informed
RIRE	Répertoire informatisé des rues et emplacements
SCA	Service de concertation des arrondissements
SIA	Système d'information des arrondissements
SIGS	Système d'information géographique et spatiale
SIRR	Service des infrastructures du réseau routier
SIURS	Système d'informations urbaines à référence spatiale
STI	Service des technologies de l'information



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1. Background

In Canada, the term “geomatics” appeared in the early 1980s. This discipline arose from geography and developments in computer science. Like other cities in the world, the Ville de Montréal (the City) wanted to gather all its geographic data and make it available. As a consequence, it turned to technologies that already existed on the market and were well established in other large cities. It therefore acquired the Système d’information géographique et spatiale (SIGS) in order to graphically represent the reality of the land covering the territory of the Island of Montréal.

These days, many of the decisions made all over the world take geography into account. Geographic data is at the very source of the science of geomatics. Geographic data is often processed in specialized software called a geographic information systems or GIS. This type of system is an integrated set of hardware, software and data for gathering, managing, analyzing and displaying all spatially referenced information (e.g., aqueducts, streets and parks), regardless of the format.

A system such as the SIGS quickly reveals features that might go unnoticed or be difficult to understand if they were presented other than on a map (e.g., in a report or spreadsheet).

1.1. Definition of Geomatics

Geomatics includes the set of tools and methods used to acquire, represent, analyze and integrate geographic data. The term “geomatics” was derived from a contraction of the words “geography” and “informatics.” A decision was made to group together in a coherent way all the knowledge and technologies necessary for the production and processing of digital data describing the land, its resources or any other object or phenomenon (e.g., floods) with a geographical position.

Geomatics consists of at least three separate activities: gathering, processing and distributing geographic data.

While geomatics is not well understood by the general public, citizens use its applications on a daily basis without even knowing it (e.g., GPS navigation).

Common examples of fields in which geomatics is used:

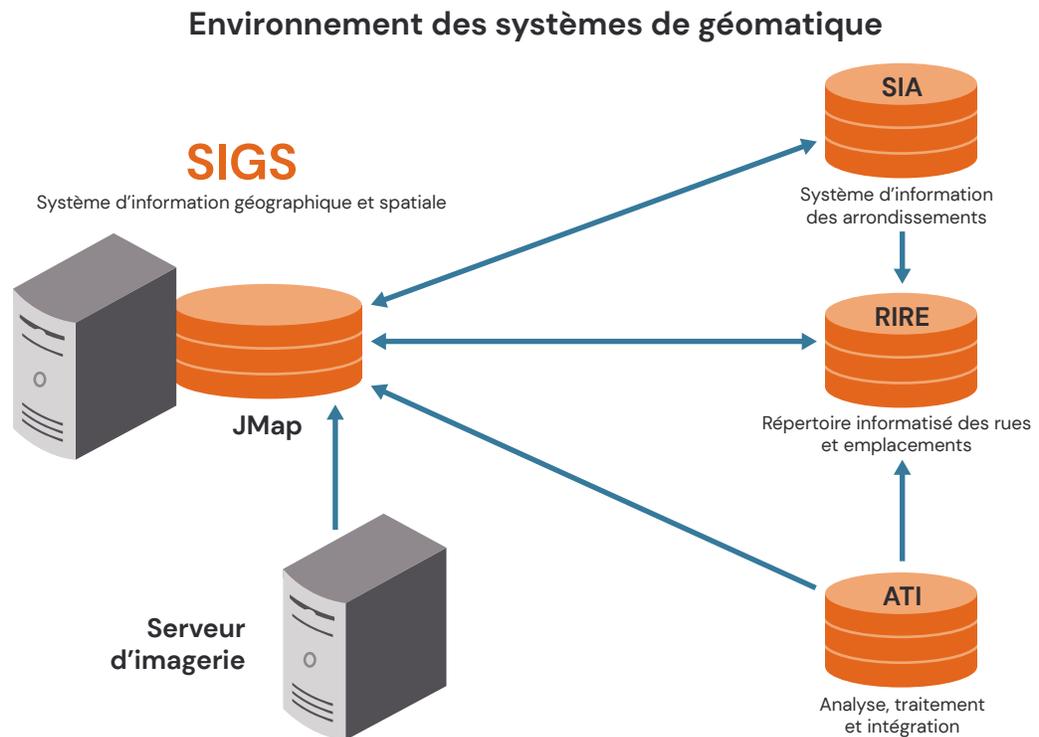
- Engineering;
- Land surveying;
- Geography;
- Topography;
- Land use and urban planning;
- Agriculture;
- Risk management;
- Meteorology;
- 911;
- Public safety;
- Hydrography;
- Transportation.

1.2. Description of Systems in the Field of Geomatics in Ville de Montréal

The main sources of data in the geomatics systems are the following:

- Land data;
- Topography;
- Green spaces;
- Heritage;
- Water and sanitation;
- Security;
- Service de police de la Ville de Montréal;
- Service de sécurité incendie de Montréal;
- Streets and parking;
- Construction permits;
- Urban planning;
- Habitat;
- Urban travel;
- Urban cleanliness;
- Public;
- Outreach mission.

The following diagram shows the environment of the City's geomatics systems.



Here are details of the components of this environment:

- **SIGS**: can be used to query, interpret and understand geographic data. This system is supplied by JMap, a map-based integration platform delivered by a supplier specializing in geomatics.

This platform is connected to a large number of systems and consolidates disparate data to facilitate the creation of a fully integrated IT ecosystem. It enables managers, SIGS analysts and non-technical users to collaborate, analyze, make decisions and take action in real time. It was deployed within the City in client-server mode.

Mapping data is structured in 366 layers in the SIGS. These layers (e.g., land register, buildings and plans) are displayed on the map like transparencies piled on top of each other. They are independent of each other and can be displayed or hidden.

- **Répertoire informatisé des rues et emplacements (RIRE)**: This database (DB) can be consulted to obtain information on roads and locations (property tax and tenant accounts) on the territory of the island of Montréal, including a map section. The data in this DB converges towards the SIGS.
- **Système d'informations urbaines à référence spatiale (SIURS)**: This system contains the geomatics data (e.g., addresses, islands, lakes and railways) found in the SIGS. This is not a system in the usual sense of the term, but rather a file storage centre in a network directory connected to the RIRE database.

- **Système d'information des arrondissements (SIA):** This system is a DB of non-mapping data that is geographically represented in the SIGS. About thirty applications originating from business units supply this DB, such as applications for managing routes and road signs.
- **Analyse, traitement et intégration (ATI):** This is a DB containing the geospatial data (geographic data that uses coordinates to indicate position) of the Division de la géomatique of the Service des infrastructures du réseau routier (SIRR). This DB supplies the RIRE and SIGS systems.
- **Serveur d'imagerie:** This server hosts orthophotographs, which are digitized aerial photos corrected by a computer so that they can be superimposed according to the ground mapping. Orthophotographs display geo-referenced data: the water network, the aqueduct system, the roads, the canopy, the géobase (the road network layer in the SIGS) and the basic model (three-dimensional digital modelling of buildings and topography of the ground, on which are placed aerial photographs).

SIGS users are from the City's different business units and boroughs as well as related cities. An internal survey on the use of the SIGS was conducted from July to September 2019.¹ Based on the number of responses received, 47.3% of the respondents are from central departments and 52.7% are from boroughs. Nineteen of the 36 central departments responded to the survey, including the Service de l'eau, the SIRR, the Service de la gestion et de la planification immobilière and the Service de sécurité incendie de Montréal. All 19 boroughs use the SIGS.

1.3. Main Advantages of a Geographic Information System

The main advantages of a geographic information system—such as the GIS used by the City—are as follows:

- Centralization of data from a variety of applications;
- Management of a great deal of information of all types, e.g., satellite images, aerial photographs, maps, databases; spatial and non-spatial data (GIS, databases, sensors, GPS and radio frequency identification);
- Rapid data updating;
- Production of queries (classical and spatial);
- Creation of new layers of information through data crossing or data queries;
- Viewing of geographic data;
- Optimization of the functioning of an organization;
- Powerful decision-making tool (e.g., for planning road work or snow clearing).

¹ Results of the survey on the use of the SIGS by the Service de concertation des arrondissements.

1.4. Main Issues with a Geographic Information System

The main issue associated with a geographic information system is obtaining data of a high enough quality that it is reliable and representative of reality. For this purpose, a separate audit on the quality of geomatics data is under way.

The other issues normally associated with a system or a DB also apply to the use of a geographic information system. In particular, these issues concern:

- the protection of sensitive or confidential data, if applicable (e.g., land-related data, building permits). For this purpose, the City has decided to remove all personal information;
- keeping accessible data up to date;
- the security configuration of the system;
- patch management;
- IT recovery in the event of a system breakdown;
- logical access management, especially privileged access, for the purpose of preserving data integrity.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act* (CTA), we completed a performance audit mission on the Geomatics Systems Management. We performed this mission in accordance with the *Canadian Standard on Assurance Engagements* (CSAE) 3001, described in the *CPA Canada Handbook – Assurance*.

The purpose of this audit was to assess the effectiveness of the control mechanisms in place to ensure the integrity, confidentiality and availability of data on both the SIGS environment and the hosted databases and files to which it is connected.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control* (CSQC) 1 from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit focused solely on the SIGS, the RIRE, SIA and ATI databases and the Serveur d'imagerie. The SIGS contains geomatics data from these associated databases and this associated server.

To conduct our audit work, we audited the following business units involved in geomatics systems management:

- The Service des technologies de l'information (STI);
- The Service de concertation des arrondissements (SCA);
- The Service des infrastructures du réseau routier (SIRR).

Our audit work focused on the period from June 2020 to January 2021. Our audit work consisted in interviewing personnel, examining various documents and conducting surveys that we considered appropriate to obtain conclusive evidence. We also took into account information that was sent to us up to March 22, 2021.

Upon completing our work, we submitted a draft audit report to the managers of each of the audited business units for discussion purposes. The final report was then forwarded to the management of each of the business units involved as well as to the Direction générale to obtain action plans and timelines for implementing the recommendations concerning them.

3. Audit Results

3.1. Governance of the Système d'information géographique et spatiale (SIGS)

Sound governance of the SIGS consists primarily in defining the roles and responsibilities of the various parties involved in each task associated with managing it. This is formalized in a RACI (Responsible, Accountable, Consulted and Informed) responsibility matrix.

It also consists in identifying and formally assigning an owner to the SIGS, one vested with the appropriate legitimacy and authority to make decisions concerning this system and provide adequate guidance to all the stakeholders involved concerning their actions, such as adding layers of information and applying a new strategic orientation, or simply in their queries or requests, and ultimately to have these actions accepted or refused, depending on their impacts on the SIGS.

We were informed by the business units we met with that the parties involved in governing and managing the SIGS are the STI and the SCA.

We noted that one of the City’s intranet pages concerns the geomatics applications (e.g., the SIGS) that are maintained by the Centre d’expertise en géomatique. It also lists resources to be contacted based on the specific need (e.g., requesting access or advice in geomatics, reporting an incident or a data problem, making a request for a change or a project, contacting the SIGS or RIRE pilot). All this information is kept up to date. In addition, details on SIGS support groups are given in the IT services management tool accessible through the STI.

However, in our estimation, the elements listed above do not correspond to a RACI responsibility matrix for the SIGS. Furthermore, a SIGS owner has not been formally identified or assigned.

A lack of formality concerning the roles and responsibilities of the stakeholders involved and their assignment could lead to a duplication of responsibilities or ignorance about them, or even lead to forgetting a responsibility. This situation could impact on the quality of services offered and expected by users in the business units.

3.1.A. Recommendation

We recommend that the Service de concertation des arrondissements, together with the Service des technologies de l’information:

- document a roles and responsibilities matrix for managing the Système d’information géographique et spatiale;
- officialize the system owner in the matrix;
- ensure that these roles and responsibilities are communicated and properly understood.

3.2. Privileged Logical Access Management

3.2.1. Authentication Parameters

Authentication parameters can provide a formal framework for the identifiers—user codes and passwords—that are used to connect to the different computer systems. To achieve this, it is above all necessary to define a management framework for authentication and to apply it appropriately in the relevant computer systems. These authentication parameters concern the use of a user code and the password strategy, meaning the minimum length, complexity, period of validity and history of passwords as well as the number of unsuccessful attempts, the account lockout duration and so on.

We noted that a directive concerning logical access management was issued in July 2020 and a logical access management standard was issued in November 2020. Under the directive, the logical access management standard specifies the security requirements to be complied with, including the authentication parameters. This standard is in keeping with sound practices.

However, no procedure on the authentication parameters has been defined for the Oracle DBs, i.e., the RIRE and ATI DBs.

We also found that the authentication parameters set forth in the standard issued in November 2020 are not all applied in the geomatics systems, with the exception of the Serveur d'imagerie.

The use of passwords that are not strong enough could lead to unauthorized access.

3.2.1.A. Recommendation

We recommend that the Service des technologies de l'information develop a procedure concerning the authentication parameters specific to Oracle databases.

3.2.1.B. Recommendation

We recommend that the Service des technologies de l'information comply with the new Logical Access Management Standard concerning authentication for the Système d'information géographique et spatiale (SIGS), the Système d'information des arrondissements (SIA) database, the Répertoire informatisé des rues et emplacements (RIRE) database and the Analyse, traitement et intégration (ATI) database.

3.2.2. Privileged Logical Access Management Procedure

A logical access management procedure outlines the steps to be followed to create, modify, revoke, review and delete accounts and the monitoring of logical access rights, more specifically, privileged access. Privileged access is granted to system administrators and authorized resources who require more extensive access to data to accomplish their tasks.

This procedure should cover the following:

- Limited and restricted use of privileged access by authorized resources;
- Formal approval of all requests to use an account with privileged access;
- Deletion of unused user accounts that have been suspended for a certain period of time;
- Regular review of access rights associated with the accounts;
- Monitoring of high-privilege accounts.

We noted that the logical access management standard issued in November 2020 contains specific requirements for high-privilege accounts. Details of these requirements should be found in a logical access management procedure outlining the steps to be followed to create, modify, revoke, review, delete and monitor logical access rights for this type of account.

However, we found that no procedure for managing privileged logical access to geomatics systems (SIGS/JMap, RIRE, SIA, ATI and the Serveur d'imagerie) has been developed, approved or distributed to the stakeholders.

Nevertheless, on the whole, informal procedures for managing privileged logical access are in place. In the absence of requests to create, modify or revoke privileged access to geomatics systems, no efficiency test was conducted for the period of November 2019 to October 2020. On the other hand, we found no obsolete accounts in the lists of privileged users of geomatics systems. Moreover, the access review conducted on the geomatics systems is adequate.

The absence of a documented procedure for managing high-privilege logical access could lead to poor management of this type of access; it could even result in granting unauthorized access to geomatics data.

3.2.2.A. Recommendation

We recommend that the Service des technologies de l'information develop, approve and distribute a procedure for managing privileged logical access to the Système d'information géographique et spatiale (SIGS), the Système d'information des arrondissements (SIA) database, Répertoire informatisé des rues et emplacements (RIRE) database, Analyse, traitement et intégration (ATI) database and the Serveur d'imagerie.

3.3. Resources Specialized in Geomatics

The presence of resources specialized in geomatics provides an organization with resources skilled in managing the geomatics data integration platform and other associated systems. These resources meet unique, highly specific needs based on their business sector: land use, transportation, traffic signalling, water management and a host of others. To do this, a sufficient number of resources specialized in geomatics should be present and their leading-edge skills should be kept up to date in accordance with changes in geomatics systems.

By department, we took note of the following:

Service des technologies de l'information (STI)

The STI's Direction Solutions d'affaires – Gestion du territoire, with its Centre d'expertise en géomatique, has a sufficient number of resources dedicated to geomatics with extensive expertise in this field. This number meets the Centre's current needs, because priority is given to the operation of systems according to geomatics projects that are carried out based on available resources. This Centre also has one resource that specializes in the RIRE DB as well as one resource that specializes in the SIURS (file storage centre). This Direction also has resources that support the SIGS. The Direction engagement numérique has one resource that specializes in the SIA DB.

A reorganization plan has been deployed within the Direction Solutions d'affaires – Gestion du territoire to ensure succession for key positions occupied by specialized resources for the RIRE, SIA and SIURS DBs. A human resources training program has been defined for the resources that support the SIGS in this division. In addition, a table listing training programs for the Centre d'expertise en géomatique is kept up to date and approved by the management team.

No recommendation is necessary.

Service de concertation des arrondissements (SCA)

The SCA's Division du développement, exploitation et pilotage de système has a sufficient number of resources dedicated to geomatics-related tasks. They are experts in the field of geomatics and meet this division's current needs.

A human resources succession plan is under development to cover all employees in this division. No formal training plan has been developed within this division. However, training is taken based on needs and production systems. In addition, steps are being taken to develop the service offering and the tools required for applications that enter the SIGS, such as Planif neige and Info remorquage. Additional training will therefore be introduced to support these services.

No recommendation is necessary.

Service des infrastructures du réseau routier (SIRR)

The SIRR's Division de la géomatique and, more specifically, its geomatics engineering section, has a sufficient number of resources dedicated to geomatics activities to meet the current needs and responsibilities associated with the ATI DB and the Serveur d'imagerie.

A training plan has been developed and will be updated in early 2021. All the resources of the geomatics engineering team received online training in accordance with this plan. A reorganization plan is under way within this team to address succession and ensure all tasks are assigned a manager.

No recommendation is necessary.

3.4. Functional Documentation

Functional documentation deals with the technical information of a system. This type of documentation covers system configuration and the creation of the IT environment and is used as a reference for maintenance, development, technical support, training and operations management activities.

We noted that functional documentation on the geomatics systems—SIGS, the RIRE database (including its SIURS file storage system, which is connected to RIRE), the SIA and ATI databases and the Serveur d'imagerie—had either been developed by stakeholders involved in system management or obtained from the suppliers concerned.

In our estimation, all of the existing documentation helps ensure sound geomatics systems management. More specifically, for example, one set of functional documents is used to manage the RIRE DB containing data sets, a second is helpful for understanding the functioning of the SIURS, its components and the update procedures applied, a third covers the configuration of the ATI DB environment and its stored data, and a fourth outlines the procedure for distributing orthophotographs from the Serveur d'imagerie.

We also noted that functional documents are reviewed and updated by the appropriate resources and are known to and used by the stakeholders who require them in accordance with their responsibilities.

No recommendation is necessary.

3.5. Security Configuration

A security configuration consists in defining the values assigned to the security parameters of a computer system so it is not vulnerable to malicious connections and to protect its content, which may include sensitive data. A security configuration guide formally defines the values to be implemented in the configuration of a computer system.

We noted that the SIGS does not contain any confidential, strategic, sensitive or personal data. The SIGS client interface is built on the map-based integration platform JMap. JMap is a product purchased from a supplier that specializes in the field of geomatics and is responsible for maintaining and updating it.

The supplier also provides a configuration guide on its website, which is accessible to everyone. This guide describes security configuration and how to publish a map with JMap. The version in production, with the SIGS client interface, dates from 2010. No other update has taken place. We found no deficiencies in the configuration in production following correlation with the configuration guide.

No recommendation is necessary.

3.6. Incident Management in the Système d'information géographique et spatiale (SIGS)

To ensure effective, efficient incident management, a formally approved incident management procedure will serve as a reference for the stakeholders involved in this type of management. The key steps in the incident management process include opening, categorizing, prioritizing, investigating, resolving and closing an incident record.

We noted that the STI had no procedure for managing SIGS incidents. However, the STI teams apply an informal incident management process.

In a random selection from the list of incidents we obtained from the STI, we selected eight of the 71 moderate and high-priority incidents² and two of the 166 low-priority incidents that occurred in the period from November 1, 2019, to October 30, 2020. This list does not include any critical-priority incident. Our incident sample is as follows:

- five high-priority incidents;
- three moderate-priority incidents;
- two low-priority incidents.

We noted that this informal process for managing SIGS incidents follows sound practices in terms of documenting, categorizing, prioritizing, resolving and closing an incident in the City's IT services management tool.

However, we noted that the SIGS does not send a notification at the time of an incident. This is because notification is not integrated into the map-based integration platform, JMap, which is currently in production. Nevertheless, as soon as an SIGS incident record is opened in the IT services management tool, it sends a notification email to the Centre d'expertise en géomatique team. We further noted that this tool also sends an email to IT managers when an incident is not dealt with within the prescribed recovery times. In this regard, all the incidents in our sample had been resolved within these periods.

The absence of a documented procedure for managing SIGS incidents could lead to poor management of such incidents, which could cause instability in the SIGS and even lead to a significant reduction or a temporary unavailability of the service expected.

3.6.A. Recommendation

We recommend that the Service des technologies de l'information document, approve and distribute a procedure for managing incidents in the Système d'information géographique et spatiale.

² The priority of an incident is a combination of its impact and its urgency. Priority is useful in identifying the relative importance of incidents and assigning resources accordingly.

3.7. Backup Copies Management of the Système d'information géographique et spatiale (SIGS) Configuration Parameters

A computer system contains several types of information, including configuration parameters. These parameters are the very foundations of the computer system. Without these parameters, the system cannot be functional and perform the intended operations. They can be used to define, for example, the parameters for displaying data and the parameters of connection paths to other systems, such as databases or the file server.

Backup copies contain information on the configuration parameters. In a situation of system breakdown, equipment damage or loop back, it is necessary to have access to backup copies of the up-to-date configuration parameters in order to reconstruct a computer system. Without this, reconstruction could be very difficult, even impossible.

During our meetings with the STI, we noted that the SIGS, with its map-based integration platform, JMap, does not host and does not produce any data on business units originating from the RIRE, SIA or ATI DBs or the Serveur d'imagerie, which shows the data in these databases.

The information hosted in JMap consists of the configuration parameters of applications (e.g., the SIGS) and personal layers. More specifically, these parameters are listed as follows:

- The DB connection configurations (addresses, user names, passwords) used by the application layers;
- The layer display parameters;
- The connection paths from the layers to the DBs or data files;
- Schedules for refreshing data sources;
- User identifiers, i.e., the user code and password;
- Interfaces with the other, non-mapping systems.

Personal layers refer to the data layers that users create for their personal use or to share with their colleagues.

We noted that a procedure for managing backup copies of the SIGS configuration parameters has been developed by a technical resource of the STI and approved by both the line manager and the information security team. This procedure, which can be accessed by administrators of backup copies, covers the IT infrastructure, including, in particular, the Windows servers that host the SIGS. It contains the information normally expected, including a description of the backup service (type of backup tool, replication, autonomy), the computer architecture and the backup policy (frequency and retention).

Moreover, backup copies are produced regularly. Every day, a backup tool makes incremental backup copies³ of all the Windows server files in which the SIGS is hosted, including the system configuration parameters. The replication is carried out simultaneously at the second site, seven kilometres away. Every year, a complete backup of the City's IT infrastructure is made. An automated alert system is in place to inform administrators on a daily basis of any execution problem encountered in the production of backup copies.

We also noted that recovery tests are conducted on the IT infrastructure, but none on the SIGS configuration parameters. These parameters could be easily defined by referring to the configuration guide provided by the supplier specializing in the field of geomatics. Consequently, we consider the residual risk to be acceptable.

No recommendation is necessary.

3.8. IT Contingency Plan for the **Système d'information géographique et spatiale (SIGS)**

In the event of an incident, breakdown or contamination by malware or hacking software, an organization's computer systems can suddenly become unusable. Having an adapted IT contingency plan can help an organization quickly resume operations. IT recovery also relies on the existence of a backup environment. The only way of knowing whether the contingency plan and backup environment pass the reality test is to perform regular tests. The test results, if applicable, provide an opportunity to update the contingency plan and backup environment.

The business units we interviewed informed us of the existence of a persistent problem. A preventive restart of the SIGS needs to be carried out every week in order to prevent sudden breakdowns caused by a memory leak in JMap. A memory leak occurs when the SIGS uses more memory than necessary, which leads to saturation of the hosting application server's memory.

During these restarts, the SIGS does not always come back functional. Event logs do not cite any problem in particular. The Centre d'expertise en géomatique suspects long DB reconnection times. In the event of a breakdown, users wait for the SIGS JMap service to restart for lack of another option. In the event of server corruption, the backup copies of the SIGS configuration parameters can be restored.

We noted that the City has not developed an IT contingency plan for the SIGS. An inventory of the IT systems used by the Direction Solutions d'affaires – Gestion du territoire, including the SIGS, was produced by the architects. Over the course of our mandate, a business impact analysis was conducted and completed on these systems. The IT contingency plan of this division will ensue at a later date yet to be determined.

³ An incremental backup contains only what has changed since the previous backup copy.

Furthermore, no backup environment has been deployed for the SIGS to date. A new server could be recreated from backup copies. However, this option has not been tested since January 2017. Since the SIGS was not considered a critical system that needs to be available 24/7, no budget has been set aside to create a contingency.

In the absence of an IT contingency plan or a backup environment for the SIGS, no contingency test has been conducted on this environment.

The absence of an IT contingency plan for the SIGS could cause this system to be unavailable during a breakdown. This situation could also cause users to lose confidence in the system and lead to an interruption of activities in their geographic data projects.

3.8.A. Recommendation

We recommend that the Service des technologies de l'information develop, approve, distribute, test and keep up to date an IT contingency plan of the map-based integration platform Système d'information géographique et spatiale/JMap.

4. Conclusion

Overall, we conclude that the Ville de Montréal (the City) has put in place several control mechanisms ensuring sound geomatics systems management. However, some elements need to be improved.

Our audit revealed that neither the roles and responsibilities associated with management of the Système d'information géographique et spatiale (SIGS) nor the owner of this system are supported by a RACI (Responsible, Accountable, Consulted and Informed) responsibility matrix. Without such a matrix, an overlooked area of responsibility could impact on the services provided by geomatics systems that the business units expect.

A logical access management standard, issued in November 2020, is not applied uniformly on the authentication parameters of geomatics systems, with the exception of the Serveur d'imagerie. In addition, no documented procedure exists concerning either management of privileged logical access to geomatics systems or the authentication parameters specific to Oracle databases (DBs). This situation could lead to unauthorized access.

No documented procedure for managing SIGS incidents has been developed, approved or distributed to the stakeholders involved. This could lead to instability in the SIGS.

No IT contingency plan for the SIGS has been deployed within the City. However, a business impact analysis of systems operated by the STI's Direction Solutions d'affaires – Gestion du territoire, including the SIGS, was conducted in November 2020. This analysis will be used as a premise to develop an IT contingency plan. This absence could cause the SIGS to become unavailable.

More specifically, here are the details based on the following evaluation criteria:

Evaluation criterion – Governance

No RACI matrix of roles and responsibilities associated with SIGS governance and management has been developed, approved and distributed to the stakeholders involved. Furthermore, the concept of owner has not been defined within the City.

Evaluation criterion – Logical access management

The City's logical access management standard of November 2020 specifies the requirements for the authentication parameters and is in keeping with sound practices. However, these parameters are not all applied in the geomatics systems, with the exception of the Serveur d'imagerie. Furthermore, no procedure concerning authentication parameters has been defined for Oracle DBs.

No documented procedure for managing privileged logical access to geomatics systems has been developed, approved and distributed to the stakeholders involved. Nevertheless, as a whole, the informal processes in place for managing privileged logical access are adequate.

Evaluation criterion – Specialized geomatics resources

Stakeholders associated with geomatics systems management all have a sufficient number of resources specialized in geomatics and in the geomatics systems.

A succession or reorganization plan exists for stakeholders in order to ensure appropriate succession at all times. A training program or plan has been defined for the stakeholders involved and training programs are pursued based on needs.

Evaluation criterion – Functional documentation

All the existing documentation helps ensure sound geomatics systems management. The functional documents are reviewed and updated by the appropriate resources and known to and used by the stakeholders who require them in accordance with their responsibilities.

Evaluation criterion – Security configuration

Management of the SIGS security configuration is adequate. It is compliant with what is recommended in the configuration guide provided by the supplier.

Evaluation criterion – Incident management

No procedure for managing SIGS incidents has been documented, approved and distributed to the stakeholders involved. However, the informal process for managing SIGS incidents follows sound practices in terms of documenting, categorizing, prioritizing, resolving and closing an incident.

Evaluation criterion – Backup copies management of the configuration parameters

A procedure for managing backup copies has been developed and it is in keeping with sound practices. Backup copies of the SIGS configuration parameters are made regularly and replicated at two physical sites. Recovery tests are conducted on the IT infrastructure.

Evaluation criterion – IT contingency plan for the SIGS

No IT contingency plan for the SIGS exists within the City. A business impact analysis was conducted within the Direction Solutions d'affaires – Gestion du territoire, and will be used as a premise for developing an IT contingency plan for the SIGS.

5. Appendix

5.1. Objective and Evaluation Criteria

Objective

Assess the effectiveness of the control mechanisms in place to ensure the integrity, confidentiality and availability of SIGS environment data and the hosted databases and files to which it is connected.

Evaluation Criteria

Our audit focused on the following evaluation criteria:

Criterion 1: Governance

The roles and responsibilities associated with the governance and management of the SIGS geomatics system are documented, comprehensive, approved, up to date and are formally distributed to and applied by the stakeholders involved.

A SIGS owner is formally identified and assigned.

Criterion 2: Logical access management

The Service des technologies de l'information (STI) has defined a management framework for the authentication parameters, based on sound practices, that is applied to geomatics systems: SIGS/JMap, the Répertoire informatisé des rues et emplacements (RIRE) DB, the Système d'information des arrondissements (SIA) DB, the Analyse, traitement et intégration (ATI) DB and the Serveur d'imagerie.

A procedure for managing logical access (creating, modifying, cancelling, reviewing, deleting and monitoring privileged access rights) to the geomatics systems—SIGS/JMap, the RIRE DB, SIA DB and ATI DB and the Serveur d'imagerie—has been developed and is followed by the stakeholders involved.

Criterion 3: Resources specialized in geomatics

There are a sufficient number of resources specialized in geomatics to allow adequate management of geomatics systems.

A human resources succession plan and a geomatics training program are in place.

Criterion 4: Functional documentation

Technical documentation covering the configuration, the use and the environment of the geomatics systems—SIGS/JMap, the RIRE DB, SIA DB and ATI DB and the Serveur d'imagerie—was developed by the parties involved in managing these systems—the STI, the Service de concertation des arrondissements (SCA) and the Service des infrastructures du réseau routier (SIRR).

These documents are approved and known to and used by all these stakeholders.

Criterion 5: Security configuration

A security configuration guide for SIGS/JMap, i.e., an enterprise repository, has been developed and approved by the STI, based on good market practices.

The security configuration parameters defined in the configuration guide are applied on the map-based integration platform in production and kept in a configuration management DB.

Criterion 6: Incident management

A procedure for managing SIGS incidents has been developed, approved, and distributed to the stakeholders involved and is reviewed at a predefined frequency.

The application of this procedure includes sending automated alerts at the time of technical incidents, classifying and prioritizing incidents based on their impact and urgency and resolving and closing incident records in the City's Système de gestion des services informatiques.

Criterion 7: Backup copies management of the configuration parameters

Adequate backup copies of the SIGS are produced regularly and stored at an external site.

Recovery tests are performed on backup copies on a regular basis.

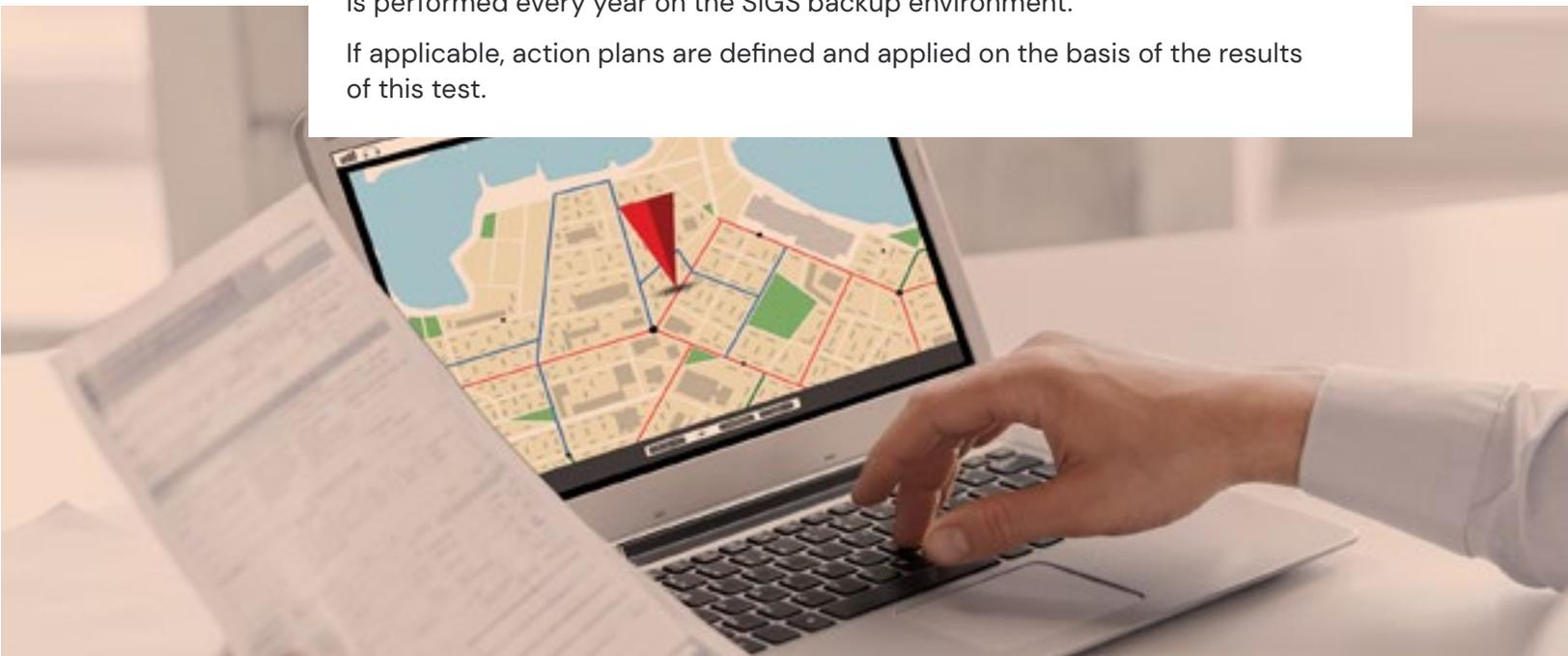
Criterion 8: IT contingency plan for SIGS

A backup or contingency plan of the SIGS/JMap map-based integration platform has been developed, approved, distributed and kept up to date.

A backup or redundancy environment has been deployed to ensure that the SIGS and its components resume operations in a timely manner in the event of a major breakdown of the production server.

A contingency plan test of the SIGS/JMap map-based integration platform is performed every year on the SIGS backup environment.

If applicable, action plans are defined and applied on the basis of the results of this test.





3.8.

Contributions Granted For Development Projects of Montréal Museum Of Archaeology And History, Pointe-à-Callière

May 28, 2021

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

Contributions Granted For Development Projects of Montréal Museum Of Archaeology And History, Pointe-à-Callière

The Ville de Montréal (the City) provides financial support to several bodies operating on its territory. This support can take different forms, such as contributions granted for their operation or to fund different projects.

The Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière (the Société), has obtained nearly \$77 million in grants for development projects of the Montreal Museum of Archaeology and History, Pointe-à-Callière (the Museum) since 2011. This amount included more than \$53 million funded by the City, which put the Société in the position of being one of the bodies most subsidized by the City in 2018 and 2019 among the legal persons excluded from the City's reporting entity.

Background

These contributions are used to implement Museum development projects. They come from operating budgets of the Service de la culture (Service), which is responsible for managing the contribution agreements for projects covered by the Société's Three-year capital works program (TCWP), phases 1 to 3 of the Montréal Archaeology and History Complex expansion projects and other projects.

The Société also occupies buildings belonging to the City under a lease between the parties. Inextricably connected to its site, the Museum owes its development to important archaeological discoveries made in Old Montréal in the 1980s. Inaugurated in 1992 as part of the 350th Anniversary celebrations of the City of Montréal, Pointe-à-Callière is the only large archaeological Museum in Canada. It is also the largest and most visited history Museum in Montréal.

Purpose of the Audit

The purpose of this audit was to ensure that the financial contribution agreements for the Museum's development projects that were granted by the City to the Société are subjected to appropriate monitoring and that these contributions are used for the intended purposes.

Results

Our audit led us to conclude that the City did not always conduct appropriate monitoring to ensure continued compliance with contribution agreements, making it difficult for the City to confirm that the contributions granted were used for the intended purposes. Our work led us to conclude that there is a lack of compliance with some of the agreement clauses, including those that concern adequate separate accounting for the Fort Ville-Marie and William Collector projects, the quality of the information found in cost reports and compliance with the City council by-law concerning contract management. Finally, we noted that the task of approving the granting of contracts is delegated to a committee of the Société's Board of Directors (BD) without any accountability reporting being submitted to it, according to the minutes we consulted of proceedings that took place from 2017 to 2019.

In addition, we noted that some costs were claimed after the agreement expired and that unused funds were transferred to fund other projects without formal approvals being obtained beforehand. Although the Service monitored the Société regularly, the accountability reporting is not done in a timely manner, with the result that the Service is presented with a fait accompli once the amounts are spent.

Main Findings

Eligibility of Costs Charged to Projects

- Some cost parameters are not included in contribution agreements, which leads to ambiguities about eligible costs at different stages of projects.
- There is a lack of compliance with some of the clauses in the agreements, including the requirement that separate accounting be kept for each project in order to identify the actual costs of the Fort Ville-Marie and William Collector projects.
- Some project implementation deadlines set forth in grant agreements were not met; the Société claimed costs after expiry of the deadlines provided for by agreements without these being extended and without the required approvals being obtained in writing.

Accountability Reporting Produced and Filed

- Accountability reporting is not done regularly, which presents an issue for assessing, in a timely manner, the extent of the work completed.
- The City's contribution agreements do not specify that any grant received from other sources reduces the costs supported by the City.

Monitoring Mechanisms

- The Société has not complied with the *City's Contract Management Policy* even though this is a requirement of some contribution agreements. The Service does not check to make sure that the Société complies with this Policy.
- Although monitoring was carried out, the Service did not fully assume its supervisory role, which would have made it possible to detect deficiencies in the accounting of each project, transfers of funds between projects, the fact that excess funds were not returned and contract management done by the Société that was not always in keeping with the City's Contract Management Policy.

Accounting Done by the Société

- The Société does not comply with contribution agreements, because it does not maintain adequate accounting for the Fort Ville-Marie and William Collector projects, which leads to discrepancies between the Société's records and reports submitted to the City.

Approval Process Within the Société

- The members of the BD or the Executive Office delegated their power to approve contracts for some projects without their accountability reporting being submitted to the BD, which includes an observer employed by the City; as a result, this observer does not receive any information on decisions made by the Société concerning the granting of contracts.

In addition to these results, we formulated various recommendations to the business units, which are presented in the following pages. The business units concerned were given the opportunity to agree to these recommendations.

List of Acronyms

BD	Board of Directors
BIG	Bureau de l'Inspecteur général
CTA	<i>Cities and Towns Act</i>
GDD	Système de gestion des décisions des instances
MCCQ	Ministère de la Culture et des Communications
Museum	Montreal Museum of Archaeology and History, Pointe-à-Callière
NFB	National Film Board
PO	Purchase order
QIM	Quartier International de Montréal
Service	Service de la culture
Société	Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière
Société AGIL	Société AGIL OBNL
TCWP	Three-year capital works program



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1. Background

The Ville de Montréal (the City) provides financial support to several bodies operating on its territory. This support can take different forms, such as contributions granted for their operation or for the purpose of funding different projects. The Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière (the Société), is one of the bodies that benefits from these contributions.

Extent of Contributions Granted to the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

The Société was funded by an annual operating grant of more than \$7 million for the years 2017 to 2019. It occupies buildings belonging to the City under a lease between the parties. This component is funded by the City's contribution expenditure budget.

The Société also receives contributions from the City for the implementation of projects aimed at developing Pointe-à-Callière, Montreal Museum of Archaeology and History, Pointe-à-Callière (the Museum). This component comes from the operating budgets of the Service de la culture (Service), which is responsible for managing contribution agreements for projects covered by the Société's Three-year capital works program (TCWP), phases 1 to 3 of the Archaeology and History Complex expansion projects and other projects.

As a result, the Société obtained nearly \$77 million in grants for several subsidized projects from 2011 to 2021. This amount included more than \$53 million funded by the City and more than \$21 million paid by the Québec government through the Ministère de la Culture et des Communications (MCCQ). This puts the Société in the position of being one of the bodies most subsidized by the City in 2018 and 2019 among the legal persons outside of the City's reporting entity.

The following table shows the funding sources for subsidized projects from 2011 to 2021.

TABLE 1

Funding Sources for Subsidized Projects from 2011 to 2021^[c]

Projects	City	Provincial	Federal	Other sources	Total
Mariners' House ^[d]	\$3,422,782	\$20,015,000	\$0	\$0	\$23,437,782
Fort Ville-Marie	\$18,009,470	\$0	\$1,000,000	0\$	\$19,009,470
William Collector	\$12,519,832	\$0	\$0	\$0	\$12,519,832
2014–2016 TCWP	\$2,350,000	\$0	\$0	\$0	\$2,350,000
2016–2018 TCWP	\$3,800,000 ^[b]	\$0	\$0	\$0	\$3,800,000
Multimedia	\$2,500,000 ^[b]	\$950,000 ^[a]	\$500,000	\$350,000	\$4,300,000
Archéolab	\$0	\$500,000 ^[a]	\$0	\$0	\$500,000
Place D'Youville archaeological digs	\$6,000,000	\$0	\$0	\$0	\$6,000,000
2018–2020 TCWP	\$4,160,000	\$0	\$0	\$0	\$4,160,000
Other projects	\$720,000	\$0	\$0	\$0	\$720,000
Total	\$53,482,084	\$21,465,000	\$1,500,000	\$350,000	\$76,797,084

^[a] The MCCQ delegated the management of grant agreements to the City; the funds come from cultural development agreements signed between the City and the MCCQ.

^[b] The City's total grant for the 2016–2018 TCWP was \$6,300,000.

^[c] The data was compiled from data collected by the City's Système de gestion des décisions des instances (GDD).

^[d] The City's grant includes archaeological digs for \$1,275,000, the refurbishment of the Éperon building for \$1,000,000, the purchase and installation of equipment for \$600,000 and refund of the occupancy costs for \$547,782. The total amount is \$3,422,782.

A description of the projects implemented by the Société is presented in Appendix 5.2.

Pointe-à-Callière, Montréal Museum of Archaeology and History

Inextricably connected to its site, the Museum owes its development to important archaeological discoveries made in Old Montréal in the 1980s. Inaugurated in 1992 as part of the 350th Anniversary celebrations of the City of Montréal, Pointe-à-Callière is the only large archaeological museum in Canada. It is also the largest and most visited history museum in Montréal.¹

¹ Museum Website: <https://pacmusee.qc.ca/>

In addition to the permanent exhibitions—*Where Montréal Began*, *Memory Collector*, *Building Montréal*, *Crossroads Montréal*, *Archaeo-Adventure* and *Come Aboard! Pirates or Privateers?*—the Museum also presents *Generations MTL*, an avant-garde multimedia extravaganza on the history of the City. Every year, the Museum also holds three national and international temporary exhibitions as well as a full and constantly changing program of cultural activities for young people and families. The Museum is also home to a Gift Shop and the L'Arrivage Bistro².

Pavilions and Structures

The Éperon Building – Reception Pavilion

The Museum's main pavilion was inaugurated in 1992. The Éperon is a building with inspiring architecture. Rising on the foundations of the prestigious 19th-century Royal Insurance Company building, the Éperon repeats the triangular contours of its predecessor and features a tower overlooking the Port of Montréal. Its foundations also overlay even older vestiges of the City, including Montréal's first Catholic cemetery. The Éperon building houses reception services, the Hydro-Québec multimedia theatre, a temporary exhibition hall, a restaurant and, in the basement, the permanent exhibition *Crossroads Montréal*.³

First Collector Sewer – William Collector

A portion of the first collector sewer in Canada was restored in 2017. It became the backbone of the Montréal Archaeology and History Complex, an underground network connecting a unique series of authentic archaeological and historical sites. In the long term, the collector sewer, which made it possible to take the Little Saint-Pierre River underground in 1832, will be accessible to the public over a length of 375 metres. On the date of Montréal's 375th anniversary, May 17, 2017, the Museum made 110 metres of the collector accessible to the general public.⁴

Fort Ville-Marie – Québecor Pavilion

The site was discovered after the Museum acquired, in January 2000, a property dating from the 19th century and located in proximity to the Museum's main building. The work accomplished on the site by Pointe-à-Callière's Archaeological Field School in partnership with the Université de Montréal, from 2002 to 2014, resulted in the discovery of the ruins of Fort Ville-Marie and the Callière's residence, which have helped provide insight into the period when the City was founded. The Museum made this site accessible to the general public May 17, 2017. The Museum's documentation centre is also located in this pavilion.⁵

² Website: <https://pacmusee.qc.ca/en/plan-your-visit/museum-restaurant/>

³ Website: <https://pacmusee.qc.ca/en/press-room/press-releases/a-contemporary-project-built-on-history/>

⁴ Website: <https://pacmusee.qc.ca/en/exhibitions/detail/memory-collector/>

⁵ Website: <https://pacmusee.qc.ca/en/about/news/details/new-fort-ville-marie-quebecor-pavilion/>

The Marketplace

In the course of archaeological and historical research, fascinating artifacts were uncovered at Place Royale relating to everyday Indigenous and Montréal life beginning in the 14th century. This was also the site of the first marketplace in Montréal in 1676. The archaeological crypt, located in the Museum, beneath Place Royale, features remains of works built over the centuries by masons and tradesmen. The archaeological remains and artifacts in the crypt are part of the permanent exhibition *Building Montréal*.⁶

The Old Custom House – Fondation J. Armand Bombardier Pavilion

Designed by architect John Ostell, this building, erected in 1837, housed Montréal's custom house. It is among the first architectural elements attesting to the British presence in the City. Expanded in 1881, the Old Custom House is now home to the permanent exhibition *Come Aboard! Pirates or Privateers?* geared towards families and school groups. A lunchroom recreates the style of a New France-era inn and the Lunch Space can accommodate school groups and exhibitions.⁷

The Mariners' House – National Bank Pavilion

Built in 1953 and inaugurated on March 6, 2013, as part of the Pointe-à-Callière expansion project, the Mariners' House can accommodate large temporary exhibits and cultural events. The four-storey building at 165 Place D'Youville features large exhibition spaces and multipurpose rooms available for rent, including the spectacular *COGECO 360° Space* on the roof of the pavilion. The Mariners' House also houses the Museum Gift Shop, spaces for the Foundation—including a salon reserved for members—and the *Archaeo-Adventure* workshop, a simulated archaeological dig site for young people and families.⁸

The Youville Pumping Station

Built in 1915, the Youville Pumping Station is Montréal's first electric-powered wastewater pumping station. Located at 173 Place D'Youville, the building was opened to the public in 1998. The neo-classical style building with a Scottish brick façade is home today to an industrial heritage interpretation centre for school groups; it can also accommodate private groups and events.⁹

⁶ Website: <https://pacmusee.qc.ca/en/education/child-care-and-day-camps/the-marketplace/>

⁷ Website: <https://pacmusee.qc.ca/en/stories-of-montreal/article/old-custom-house-one-of-our-city-s-architectural-treasures/>

⁸ Website: <https://pacmusee.qc.ca/en/stories-of-montreal/article/the-mariners-house-anchored-in-history/>

⁹ Website: <https://pacmusee.qc.ca/en/space-rental/venues/youville-pumping-station/>

TABLE 2

Summary of Museum Components and Projects Implemented

Pavilions and structures	Property	Permanent exhibitions / in situ remains ^[a]	Projects
The Éperon building – Reception Pavilion	City ^[b]	Multimedia Show Generations MTL <i>Crossroads Montréal</i>	2014–2016 TCWP 2016–2018 TCWP Multimedia 2018–2020 TCWP
First collector sewer	Société	<i>Memory Collector</i> Where Montréal Began	William Collector
Fort Ville-Marie – Québecor Pavilion	Société	Fort Ville-Marie Callière’s residence	Fort Ville-Marie
The Marketplace	City ^[b]	Archaeological Crypt <i>Building Montréal</i> Place Royale 1701 – The Great Peace of Montréal	2014–2016 TCWP 2016–2018 TCWP 2018–2020 TCWP
The Old Custom House	City ^[b]	Come Aboard! Pirates or Privateers?	2018–2020 TCWP
The Mariners’ House	Société	<i>Archaeo-Adventure</i>	Mariners’ House
The Youville Pumping Station	Société	None	N/A
N/A	N/A	N/A	Place D’Youville archaeological digs
N/A	N/A	N/A	Archéolab

^[a] In situ remains are an integral part of the Museum’s archaeological collections and permanent exhibitions.
“In situ” means heritage preservation.

^[b] The Société signed a lease with the City for the use of these spaces.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act* (CTA), we completed a performance audit mission on contributions granted to the Société by the City and the use of those contributions. We performed this mission in accordance with the *Canadian Standard on Assurance Engagement* (CSAE) 3001, described in the *CPA Canada Handbook – Certification*.

The purpose of this audit was to ensure that the agreements pertaining to financial contributions for the Museum’s development projects granted by the City to the Société are subjected to appropriate monitoring and that these contributions are used for the intended purposes.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control* (CSQC) 1 from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit focused on contributions in fiscal years 2017 to 2019 and on the acquisition of tangible assets and the costs charged to projects funded by the City. However, for some aspects, financial and other data prior to or following this period was also considered. Annual operating grants were excluded from our audit. It was primarily completed from October 2020 to February 2021. We also took into account information that was sent to us up to June 2021

The work was performed with the Service and the Société.

The following table shows the projects that we selected as part of our work.

TABLE 3

Projects Examined Under the Mandate

Project description	Project name	Total contributions ^[c]	Costs incurred as of December 31, 2019 ^[a]
1) Phase 2 of the Montréal Archaeology and History Complex expansion project: Fort Ville-Marie, located at 214 Place D'Youville	Fort Ville-Marie	\$19,009,470	\$17,848,544
2) Phase 2 of the Montréal Archaeology and History Complex expansion project: the William Collector and the work beneath Place D'Youville Street	William Collector	\$12,519,832	\$13,132,733
3) 2016–2018 TCWP – Permanent exhibition renewal project	2016–2018 TCWP	\$3,800,000 ^[b]	\$3,344,742 ^[b]
4) Multimedia show renewal	Multimedia	\$4,300,000	\$4,695,252
5) Reference collection of archaeological items of Québec's history – Archéolab-Québec Phase II	Archéolab	\$500,000	\$500,484
6) Phase 3 of the Montréal Archaeology and History Complex expansion project: the archaeological digs of St. Ann's Market and the Parliament of the United Province of Canada	Place D'Youville archaeological digs	\$6,000,000	\$3,171,805
7) 2018–2020 TCWP – Permanent exhibition renewal project	2018–2020 TCWP	\$4,160,000	\$1,514,245
Total		\$50,289,302	\$44,207,805

^[a] Amounts are cumulative from the start of the project and were extracted from the Société's accounting records of December 31, 2019.

^[b] Amounts exclude the multimedia show renewal project.

^[c] Amounts include contributions from other sources.

Upon completing our work, we submitted a draft audit report to the managers concerned within the Service for discussion purposes. The final report was then forwarded to the management of the Service and the director general to obtain action plans and timelines for implementing the recommendations concerning them as well as to the deputy director general, Qualité de vie.

3. Audit Results

3.1. Eligibility of Costs Charged to Projects

As part of our audit, we obtained all the financial contribution agreements for the projects selected in order to identify all the relevant conditions and guidelines to ensure that the costs recorded for these projects are eligible according to the terms of the agreements.

3.1.1. Description of Eligible Costs and the Parameters Established for them in Grant Agreements

During our analysis of the contribution agreements, we noted that Appendix 1 of the grant agreements includes the grant application document prepared by the Société, which contains brief descriptions of projects, summary budgets, objectives, impacts and other information. We did not find any document prepared by the Service that specified any requirement for compliance with cost parameters. The lack of parameters can lead to ambiguities when the time comes to determine whether costs are eligible for the project.

In our opinion, the Service, as a funding body, should impose guidelines on types of eligible costs, with limits for each eligible cost and for each project implementation stage, including monetary ceilings. In this way, the Service could limit its financial participation in a type of expenditure or a project implementation stage. Also, the Service could limit the extent of projects subsidized by the City.

According to the analysis of agreements, the project descriptions presented in grant agreements, which city council uses as the basis for authorizing funding for them, cannot be used to properly identify the costs that will need to be incurred to implement them. They leave room for interpretation and personal judgment. The parameters should be clear, accurate and approved so that the Service can determine whether costs incurred at different stages of projects are eligible or not.

In light of these findings, we conclude that the City allows the Société a great deal of latitude and flexibility in the implementation of its projects and therefore leaves room for a great deal of interpretation, thereby allowing the Société to use practically all the budget envelopes. This occasionally leads the Société to negotiate eligible costs on a piecemeal basis.

We compared agreements of the same type issued by the MCCQ, and we noted that it imposes a limit on eligible costs at each stage of project implementation. The MCCQ is stricter in its guidelines and parameters and imposes a specific period during which costs must be incurred. This appears to us to be a good practice to put in place.

Upgrade to Projects Involving Higher Costs Than Those Set Out in the Initial Contracts at the Initiative of the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

As part of our audit, we asked for explanations concerning significant cost increases, as shown by the differences between the initial amounts and the last revised amounts in supply contracts, which are not cost overruns due to contingencies or specific situations. We identified two contracts for which upgrades were subsequently made to initial projects.

The following table shows the initial amount and the revised amount for two mandates granted for projects funded by the City.

TABLE 4
Upgrades to Projects

Project	Contract	Mandate	Initial amount	Revised amount	% Increase
Fort Ville-Marie	FVM-042	Museum collection services	\$850,000	\$1,406,229	65%
2016–2018 TCWP Multimedia	REP-MULTI-001 and 002	Multimedia show renewal	\$3,000,000	\$3,299,000	10%

The Service did not give its approval, in any form whatsoever, for project upgrades. These amounts were charged to the overall subsidized amount. The Service informed us that it was not aware of adjustments to projects, even though it met with the Société numerous times. Furthermore, no documentation is available at the Service.

3.1.2. Eligibility of Costs Incurred by the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, According to the Terms of Grant Agreements

Use of Grant Agreement Funds for Fort Ville-Marie and the William Collector

In the documents we obtained during our audit (contracts concluded with general contractors, architects and engineers), it is not possible to distinguish the actual costs of the Fort Ville-Marie project from those of the William Collector project. The Société allocated the costs on a pro rata basis, according to the costs budgeted for each one. In fact, the invoices were charged entirely to the Fort Ville-Marie project and allocated to the William Collector project at year-end prorated to the budget.

Indeed, we noted that the Société did not keep separate accounting records for these two projects and, as a result, did not comply with the clauses of the two grant agreements, which are precise in this respect. The project manager did not take into consideration this clause, which is provided for in the respective grant agreements for each project. These projects were to be treated separately for accounting purposes in the Société's records. The Société should therefore have required separate invoicing from general contractors (progressive billing) for the construction work carried out for each project. This way, the Société could have distributed the common costs to the two projects based on the weighting of the direct construction costs of each. For the other contracts, the record of the actual costs could be identified easily for each project; however, these were also distributed based on the budget.

The following table shows the financial data of these two projects from the Société's accounting records and cost reports submitted to the Service.

TABLE 5
Financial Data of Projects

Project	Source	Grant agreement	Grant from another source	Costs incurred	Surplus (Deficit)
Fort Ville-Marie	Accounting records of December 31, 2019 ^[a]	\$18,009,470	\$1,000,000	\$17,848,544	\$1,160,926
William Collector		\$12,519,832	\$0	\$13,132,733	(\$612,901)
Fort Ville-Marie	Cost report of June 3, 2020 ^[b]	\$18,009,470	\$1,000,000	\$18,476,892	\$532,578
William Collector		\$12,519,832	\$0	\$12,995,782	(\$475,950)
Fort Ville-Marie	Cost report of February 3, 2021 ^[b]	\$18,009,470	\$1,000,000	\$17,980,506	\$1,028,964
William Collector		\$12,519,832	\$0	\$12,998,294	(\$478,462)
Fort Ville-Marie	Cost report of February 19, 2021 ^[b]	\$18,009,470	\$0	\$17,693,858	\$315,612
William Collector		\$12,519,832	\$0	\$12,300,814	\$219,018

^[a] Amounts are cumulative from the start of the project and were extracted from the Société's accounting records of December 31, 2019.

^[b] Balances according to a version of the final cost report filed by the Société to the Service

As specified in section 5.3.3 of the grant agreement for the William Collector, the Société must assume full financial responsibility for the Project, including any related cost overrun, since the City does not assume any responsibility for it and cannot under any circumstances be required to pay an amount greater than the total amount of the financial contribution.

The version of the cost report dated June 3, 2020, shows a cost transfer of \$136,951 made from the William Collector project to the Fort Ville-Marie project, as well as \$500,000 budgeted for the new ticket counter project. At the time of writing this report, no approval had been provided by any authority for this new project.

The Société later amended the initial report, removing the sum of \$500,000 in its amended version of the cost report dated February 3, 2021, so that it presented only the costs of the two projects.

The Société submitted a second amended cost report to the City on February 19, 2021. In this second amended report, the Société presented all costs associated with the grant from another source separately. According to this new amended report, the grant was used to fund costs for both projects, whereas it was awarded solely for the Fort Ville-Marie project, according to the information obtained.

These operating methods make it impossible for the City to know the actual surplus or deficit of each subsidized project and obtain refunds of unspent amounts, as provided for in the grant agreements.

Use of Grant Agreement Funds for the 2016–2018 TCWP

The following table shows the 2016–2018 TCWP projects. Its purpose is to highlight the surpluses or deficits for each of the projects analyzed. In light of the information presented below, we note that the Société used the surpluses of two TCWP projects, the replacement of technological and museum equipment and the replacement of reception facilities and utility systems, to fund other projects that are part of the TCWP. While the agreement does not specify this, the Service informed us that it is strictly forbidden to use the funds of one project for the purpose of funding another one under a TCWP without written approval from the City's Direction générale or the City's deputy director, Qualité de vie.

TABLE 6

Distribution of Amounts Among Projects for the 2016–2018 TCWP

Project	Grant agreement	Grants from other sources	Financial data	Costs incurred	Surplus (Deficit)
Renewal of the multimedia show	\$2,500,000	\$1,800,000	Accounting records of December 31, 2019 ^[a]	\$4,695,251	(\$395,251)
			Cost report of August 6, 2020 ^[b]	\$4,734,656	(\$434,656)
Replacement of part of the permanent exhibitions	\$2,500,000	\$0	Accounting records of December 31, 2019 ^[a]	\$2,665,879	(\$165,879)
			Cost report of August 6, 2020 ^[b]	\$2,686,799	(\$186,799)
Public security and public announcement system	\$100,000	0\$	Accounting records of December 31, 2019 ^[a]	\$108,576	(\$8,576)
			Cost report of August 6, 2020 ^[b]	\$108,576	(\$8,576)
Replacement of technological and museum equipment (\$300,000)	\$1,200,000	\$0	Accounting records of December 31, 2019 ^[a]	\$570,287	\$629,713
Replacement of reception facilities and utility systems (\$900,000)			Cost report of August 6, 2020 ^[b]	\$571,414	\$628,586
Total – Accounting records	\$6,300,000	\$1,800,000		\$8,039,993	\$60,007
Total – Cost report				\$8,101,445	(\$1,445)

^[a] Amounts are cumulative from the start of the project and were extracted from the Société’s accounting records of December 31, 2019.

^[b] Balances according to the final cost report filed by the Société to the Service.

We in fact found that the Société offset the deficits of three projects by using the surpluses of two projects, which enabled it to keep the entire budget intended for the permanent exhibitions. However, the Service did not previously note this situation and did not advise the Société that this practice is not acceptable to the City. Such a prohibition should be integrated into any grant agreement of this type.

The Société mentioned in its 2016–2018 TCWP document that the multimedia show renewal required a budget of \$3,500,000. The Service should validate the needs and the other funding sources available to the Société in order to conclude whether it is necessary for the City to subsidize all projects.

We also noted that the costs entered in the Société’s accounting records differ from those submitted to the City, as shown in the previous table.

Use of Grant Agreement Funds for the Place D’Youville Archaeological Digs Project

The following table shows the financial data of this project from the Société’s accounting records and the cost reports sent to the Service.

TABLE 7

Financial Data of the Project – Place D’Youville Archaeological Digs

Financial data	Grant agreement	Grant paid	Costs incurred	Surplus (Deficit)
Accounting records of December 31, 2019 ^[a]	\$6,000,000	\$5,450,000	\$3,171,805	\$2,278,195
Report of December 16, 2020, filed with the City ^[b]	\$6,000,000	\$5,450,000	\$3,601,258	\$1,848,742

^[a] Amounts are cumulative from the start of the project and were extracted from the Société’s accounting records of December 31, 2019.

^[b] Balances according to the last cost report filed by the Société with the Service.

The Société informed the City that the last two payments of \$500,000 and \$50,000, which were to be made no later than August 1, 2018, and March 1, 2019, according to the agreement, were no longer necessary. To date, the City has not made the two payments, but has not yet recovered the surplus amounts paid for this project.

The archaeologists' final report was dated December 2018. According to the agreement, the project had to be completed no later than March 1, 2019. However, as the following table shows, the Société subsequently charged costs to this project and no refund was made or required by the City for the unused portion.

We noted that these costs were incurred for the Place D'Youville archaeological digs project subsequent to the schedule provided in Appendix 2 of the approved grant agreement:

- costs incurred in 2020 and estimated costs for 2021 (according to the cost report dated December 16, 2020) for professional services for the development or enhancement of Place d'Youville (2020: \$110,860; and 2021: \$301,884 (estimate));
- costs for art exhibitions and museology incurred after the archaeological digs were completed (2018: \$191,451; 2019: \$156,878; 2020: \$44,282; and 2021: \$125,000 (estimate));
- estimated costs for 2021 of \$282,000 under the heading publication, \$590,000 for an exhibition called Montréal Capital and \$20,000 for restoration of the site.

Eligibility of the Costs for In-House Staff at the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, in Projects

The Société has no documented, approved procedure for recording the costs of the Société's staff in projects. These costs, such as positions and hourly rates, and documentation required for the hours charged to projects, should be specified in grant agreements. Such a procedure should be applied systematically to better reflect the actual cost of projects in terms of their management by the Société.

Without adequate documentation on these costs, we find that the Service cannot determine, or can only determine with difficulty, whether they are incurred under grant agreements.

We also tracked down a sum of \$272,854 in salary expenses charged to the Fort Ville-Marie and William Collector projects for the years 2015 to 2017, even though an independent body was fully responsible for managing them. We did not track down any supporting documents or policies.

The various factual findings show the importance of revising contribution agreements so that they specify the eligible costs and limit the City's financial participation, particularly when other funding sources contribute to project implementation.

3.1.3. Deadline for Project Implementation According to the Agreements and Payment Methods

When a business unit implements the guidelines approved by the municipal administration, it must monitor their progress, evaluate them periodically and report on them. Accountability reporting mechanisms must be established so that informed decisions are made in a timely manner and the business unit is not presented with a *fait accompli*.

In the following table, we compiled the project implementation deadlines for grant agreements and the method of paying funds for the projects we selected in our audit. We compiled the costs incurred throughout the duration of agreements and the costs incurred after they expired. We noted that the Société incurred costs after the expiry of grant agreements for projects that were tested for a total amount of more than \$2.8 million out of \$44.2 million.

We contacted the Service to determine whether the City's decision-making authorities approved extensions to all grant agreements. The Service informed us that it gave verbal approval to extend them at follow-up meetings with the Société. Therefore, no agreement amendment was drafted and approved and there is no documentation of written approval by the Service.

In our opinion, requests to extend agreements should have been approved by city council, because it alone has the authority to amend the clauses of grant agreements in order to extend them or to increase the financial commitment.

Furthermore, we noted that grant agreements specify a deadline for the implementation of projects and that costs incurred after this deadline are not eligible and must be refunded to the City according to the terms of the grant agreements. The situation requires that agreement amendments be approved in order to prevent the Société from being under the obligation to refund unspent amounts to the City. In following up on our analysis, we found a lack of compliance with these clauses, which are not subject to appropriate monitoring.

TABLE 8

**Costs Incurred During and After the Agreements,
as of December 31, 2019**

Project	Deadline	Payment method	Total grant ^[a]	Costs incurred			Surplus (Deficit)
				During	After	Total ^[b]	
Fort Ville-Marie	December 30, 2018	Progressive	\$19,009,470	\$16,727,876	\$1,120,668	\$17,848,544	\$1,160,926
William Collector	December 30, 2018	Progressive	\$12,519,832	\$13,138,590	(\$5,857)	\$13,132,733	(\$612,901)
2016–2018 TCWP	January 31, 2019	Schedule	\$3,800,000	\$2,857,064	\$487,678	\$3,344,742	\$455,258
Multimedia	March 31, 2019	Schedule	\$4,300,000	\$4,050,290	\$644,962	\$4,695,252	(\$395,252)
Archéolab	June 1, 2018	Schedule	\$500,000	\$355,470	\$145,014	\$500,484	(\$484)
Place D'Youville archaeological digs	March 1, 2019	Schedule	\$6,000,000	\$2,742,963	\$428,842	\$3,171,805	\$2,828,195
2018–2020 TCWP	January 31, 2021	Schedule	\$4,160,000	\$1,514,245	\$0	\$1,514,245	\$2,645,755
Total			\$50,289,302	\$41,386,498	\$2,821,307	\$44,207,805	

[a] Amounts include funding from other sources.

[b] Amounts are cumulative from the start of the project and were extracted from the Société's accounting records of December 31, 2019.

We noted that a payment schedule is used to make disbursements for some projects, which entails the Société receiving the amounts from the City systematically without having to regularly submit supporting documents for the costs incurred. The accountability reporting is done subsequently, when the cost reports issued by the Société are received, with the result that the City is presented with a fait accompli, since the amounts have already been spent.

3.1.3.A. Recommendation

We recommend that the Service de la culture revise the contribution agreements to specify its requirements concerning the eligible costs used for funding different activities and the limits of eligible costs for each stage of the project.

3.1.3.B. Recommendation

We recommend that the Direction générale, in collaboration with the Service des affaires juridiques, revise the templates of grant agreements for major projects to introduce clauses for:

- restricting the transferability of funds from one project to another;
- specifying that any grant received from other sources reduces the costs assumed by the Ville de Montréal;
- obtaining final cost reports audited by an independent auditor for major projects funded by the Ville de Montréal.

3.1.3.C. Recommendation

We recommend that the Direction générale review the method of paying grants for major projects in order to facilitate the analysis of eligible costs on a regular basis and carry out monitoring in a timely manner.

3.1.3.D. Recommendation

We recommend that the Service de la culture confirm that the costs charged correspond to eligible costs according to the contribution agreements for projects and that the supporting documents substantiating the cost reports are detailed.

3.1.3.E. Recommendation

We recommend that the Service de la culture that any change considered necessary in one or more clauses of grant agreements be covered by an appendix and documented in a decision-making summary and approved by the appropriate authorities.

3.2. Accountability Reporting Produced and Filed According to the Terms of the Grant Agreements

We made sure that there was compliance with the financial accountability reporting requirement provided for in grant agreements for all the projects tested. In the following table, we present an overview of the financial accountability reporting filed for the projects tested.

TABLE 9
Overview of Financial Accountability Reporting

Project	Accountability reporting required by the agreement	Accountability reporting obtained ^[b]	Compliant with agreement
Fort Ville-Marie	All documents related to construction work, agreements, reports, plans, specifications, progressive billing, supporting documents, invoices, certificates from the engineer or architect attesting to performance of the work	A letter requesting payment accompanied by financial reports (budget and tracking of invoices and payments to suppliers)	Yes
William Collector		Yes	
2016–2018 TCWP	Accountability reporting must be submitted no later than December 1 of each year (November 1 to October 31)	Report not found as of October 31, 2017	No
Multimedia		Detailed report ^[a] on October 31, 2018 Detailed report ^[a] on December 31, 2019	No
Archéolab	Accountability reporting must be submitted no later than December 1 of each year (November 1 to October 31)	Detailed report ^[a] in June 2019	Yes
Place D'Youville archaeological digs	Accountability reporting must be submitted no later than December 1 of each year (November 1 to October 31)	Detailed report ^[a] on October 31, 2017 Report not found – October 31, 2018 Report not found – October 31, 2019 Detailed report ^[a] on December 16, 2020	No

Project	Accountability reporting required by the agreement	Accountability reporting obtained ^[b]	Compliant with agreement
2018–2020 TCWP	Accountability reporting must be submitted no later than January 31 of each year (fiscal year)	Detailed report ^[a] on December 31, 2018 Summary report on December 31, 2019	Yes

^[a] The costs are shown for each project account and each project stage determined by the Société (e.g., planning and organizing, professional services, miscellaneous). The report presents the following information associated with the invoices paid: the number, date, name of the supplier, amount, cheque number and purchase order (PO) number.

^[b] We obtained from the Service the cost reports produced and filed by the Société.

Following the analysis of the documents obtained, we found that the accountability reporting required for three projects had still not been produced according to the contribution agreements.

Yet the Société has free rein over the content of cost reports, since the Service does not impose specific guidelines about their content.

3.2.1. Accountability Reporting for the Fort Ville–Marie and William Collector Projects

As shown in Table 5, we obtained from the Service three different versions of the final summary cost report for the Fort Ville–Marie and William Collector projects. Clearly, the Société changed its mind more than once about how to present the costs incurred and the contributions obtained in its final summary cost report. These projects were finalized on December 31, 2019.

As shown in section 3.1.2., the Société reallocated the figures in its report to specify their use, thereby enabling it to maintain its entire budget for the two projects. We question the reliability of the financial data in this report, since several amended versions were submitted by the Société and the financial data does not match the Société's books.

During the period covered by our audit, the Service was in the process of drafting an agreement amendment and a decision-making summary that would allow the net surplus to be divided between the two projects. The amendment to the grant agreement was drafted for the William Collector project; however, we had found that this project was at the origin of the deficit, as shown in Table 5. The Société subsequently filed an amended summary cost report on February 19, 2021.

The Service informed us that it was not made aware that the Société had obtained additional funding. There were no documents in the Service's files about the \$1,000,000 grant for the Fort Ville-Marie project obtained from another source, and it was not aware of this grant until it obtained the first summary cost report of these two projects.

Each grant should be covered in a separate audited cost report in order to have an accurate financial picture.

The analysis and interpretation of cost reports require financial or accounting expertise. Consulting professionals in these fields would help raise relevant issues and carry out better monitoring of the cost reports submitted. We made the same observations in previous audit reports.

3.2.1.A. Recommendation

We recommend that the Service de la culture review the accountability reporting requirements, so that it can regularly obtain information it can use to assess the implementation of each project, including the costs assumed by the Ville de Montréal.

3.2.1.B. Recommendation

We recommend that the Service de la culture require that it be informed of any other funding sources obtained for projects subsidized by the Ville de Montréal.

3.2.1.C. Recommendation

We recommend that the Service de la culture ensure that the people involved in monitoring the financial aspects of agreements for major projects either have the necessary expertise or obtain external expertise for this purpose.

3.3. Compliance with the City's Contract Management Policy

In January 1, 2018, Bill 122 (*Act mainly to recognize that municipalities are local governments and to increase their autonomy and powers*) changed the scope of some sections of the CTA. The legislation was intended to broaden the definition of a municipal body for the purposes of enforcing the contract rules of section 75 of this bill, which was to become effective on January 1, 2018.

From that point on, any municipal body with any of the following characteristics was subject to municipal contract rules:

- the majority of administrators must be appointed by one or more municipalities;
- the body is a mandatory or agent of the municipality under the Act;
- its budget is adopted or approved by the municipality;
- more than half of the body's funding is secured by funds from one or more municipalities and its annual revenues are equal to or greater than \$1 million.

Any other body determined by the Minister of Municipal Affairs and Land Occupancy can also be subjected to municipal contract rules.

As a consequence of these new provisions, since more than half of the Société's funding is provided by the City and its annual revenues are greater than \$1 million, it is required to comply with this provision.

Furthermore, although this provision has been in force since January 1, 2018, the Société was already required to comply with the City's *Contract Management Policy* through grant agreements that it signed for the Fort Ville-Marie and William Collector projects. For other projects, the *Contract Management Policy* is entered in "Whereas" clauses of the agreements and it is forwarded by email after the agreements are signed or is attached as an appendix to them.

The Service did not carry out any validation to ensure that the Société had complied with the City's *Contract Management Policy*. The Service, then, did not examine any contract to assess compliance of the tender process for major contracts. The Service does not ensure through its accountability reporting that the Société complies with all the grant agreements signed. Consequently, no notice of default was served on the Société.

3.3.1. Fixing Prices or a Minimum Price in Calls for Tenders

In order to ensure that the Société was complying with the *Contract Management Policy*, as required by the contribution agreements signed with the Service, we conducted a series of tests and reviewed the tender process.

We noted that the Société fixed the price in the bid information sheet covering nine public calls for tenders for professional creation, artistic design and museum exhibition services for a total of \$8,055,000 in contracts. This situation represents an unprecedented requirement for municipal contracts.

The fact that prices are fixed in calls for tenders does not guarantee better quality or more work from the supplier at the best price. It is difficult to determine whether the Société obtained the best value for money in this particular requirement. For these contracts, the taxpayer could not benefit from free competition in those markets.

The following table shows public calls for tenders that were examined for professional artistic design and museum exhibition services for which the prices were fixed.

TABLE 10

Public Calls for Tenders for Which the Société Fixed the Price for Bidders

Project	Description of mandate	Number in the SÉAO	Price fixed
2016–2018 TCWP Multimedia	Multimedia show renewal	MULTIO1 / 1047039	\$3,000,000
2018–2020 TCWP	Creation, artistic design and museology production services	2018–MUSEO DESIGN-EXPOEP / 1215995	\$1,700,000
2016–2018 TCWP Multimedia	Professional museology services	EXPOPERMPACO2 / 1074935	\$1,200,000
Fort Ville–Marie	Museology services	PAC–QIM–FVM–MUSEOLOGY / 870008	\$850,000
William Collector	Artistic design services in museology	PAC–QIM–FVM–MUSEO–CW / 892653	\$450,000
2018–2020 TCWP	Artistic design and production services in museology	2019–MUSEO DESIGN-EXPOPC / 1279624	\$280,000
2016–2018 TCWP Multimedia	Artistic design and museology production services	2018–DESIGN–MAQUETTES / 1165366	\$250,000
Place D’Youville archaeological digs	Artistic and museographic design for an outdoor exhibition	2018–MUSEO EXT-PCU/MSA / 1149580	\$170,000
Place D’Youville archaeological digs	Artistic and museographic design for an outdoor exhibition	2019–MUSEO EXT-PCU/MSA / 1242138	\$155,000
Total			\$8,055,000

As part of our audit, we obtained the supplier contract for the renewal of the multimedia show for \$3,000,000. We obtained the detailed table of project stages. One of the stages, called “List of equipment,” shows that the supplier was to produce a final list of equipment and technology for all multimedia for \$622,500 to buy equipment at a total purchase cost of approximately \$1,000,000.

The deliverables required for this stage are as follows:

- A detailed list of all the audio, technical and technological features required and their application. This list must include detailed information on the equipment and technology selected (e.g., longevity, guarantee);
- The prices of two equipment suppliers;
- If equipment involves special work, it must be identified.

The Société obtained the list in question, a two-page document that did not specify the following items in the deliverables:

- detailed information on the equipment and technology selected (e.g., longevity, guarantee);
- prices of two equipment suppliers and a description of the special work on equipment where this was required.

We also obtained the supplier contract for the renewal of part of the permanent exhibitions for \$1,200,000. We obtained the detailed table of project stages. One of the stages, called “Preliminary list of equipment,” shows that the supplier was to produce a preliminary list of the equipment that had to be provided to the Museum for \$240,000.

The Société obtained the list in question with no other document justifying the work carried out to produce this list. The list is a two-page document, and the items appearing on it are very brief.

These last two findings illustrate that the Société likely did not get the best price for the services obtained or that the breakdown of the stages of the project do not reflect the cost of the services indicated. This is a direct consequence of the Société fixing the contract pricing.

The Société also fixed the minimum price in the bid information sheet covering four public calls for tenders for professional architectural and engineering (electrical, mechanical, civil, structural) services. These calls for tenders are shown in the following table. This situation also represents an unprecedented requirement for municipal contracts.

TABLE 11

Public Calls for Tenders for Which the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière Fixed the Price for Bidders

Project	Description of mandate	Number in the SÉAO	Price fixed
Fort Ville-Marie William Collector	Professional architectural services	PAC-QIM-FVM-ARCHI / 814498	100% ^{[a][b]}
Fort Ville-Marie William Collector	Professional mechanical and electrical engineering services	PAC-QIM-FVM-MEC-ELE / 821765	100% ^{[a][c]}
Fort Ville-Marie William Collector	Professional civil and structural engineering services	PAC-QIM-FVM-CIV-STR / 817586	100% ^{[a][c]}
Fort Ville-Marie William Collector	Professional architectural services	N/A – Contract by mutual agreement	100% ^[a]

^[a] According to the [TRANSLATION] "Fee rate for professional services provided to the government by architects or engineers."

^[b] Clause 6.3 of the tender document: [TRANSLATION] "In order to obtain the best expertise possible and provide adequate fees for high-quality services, the rate offered by the bidder cannot be lower than 100% of the "Fee rate for professional services provided to the government by architects," thereby ensuring minimum fees. Any bid lower than 100% will automatically be rejected."

^[c] Clause 6.4 of the tender document: [TRANSLATION] "In order to obtain the best expertise possible and provide adequate fees for high-quality services, the rate offered by the bidder cannot be lower than 100% of the "Fee rate for professional services provided to the government by engineers," thereby ensuring minimum fees. Any bid lower than 100% will automatically be rejected."

In our opinion, this practice does not necessarily guarantee the best expertise, higher-quality service and the avoidance of extras from the supplier.

We noted that in a 2015 report, the Bureau de l'Inspecteur général (BIG) also raised major reservations about the use of a minimum price. In its report, it pointed out especially:

[TRANSLATION] "[...] imposed requirements unprecedented in the municipal sector, which has the effect of impeding free competition, equal opportunity and the chance to obtain the best product at the best price."

"Some will argue that the rules established by legislation had an impact on the quality of the professional services provided. This viewpoint cannot under any circumstances justify the imposition of criteria that support this view and thereby circumvent the intended objectives of the legislation, one of which is to obtain the best value for money for taxpayers."

Like the BIG, we are surprised that the search for the best expertise, the highest-quality service and the avoidance of extras from the supplier would be guaranteed by this requirement.

Furthermore, neither the City's *Contract Management Policy*¹⁰ nor the administrative frameworks allow price fixing in contracts. And the Société was required to comply with the requirements of this policy.

3.3.2. Project Management: Fort Ville-Marie and William Collector

A delegated work provider agreement¹¹ was concluded between the Société and the Quartier international de Montréal¹² (Société AGIL OBNL)¹³ on November 18, 2014, to produce the Fort Ville-Marie and William Collector projects. This agreement included fees of \$1,207,281 and covered the period from October 2014 to September 2017. This period was extended until December 2017 at a cost of \$61,099 under an amendment to the agreement signed for this purpose on October 1, 2017.

¹⁰ The *Contract Management Policy* became the *Urban agglomeration By-law concerning contract management*.

¹¹ The delegated work provider awards contracts and pays all the invoices for the project (suppliers, professionals and contractors) and reinvoices these costs to the Société.

¹² The QIM is a private non-profit body. Its mission is to design, promote and implement urban development projects and public architecture projects. The Board of Directors (BD) is made up of members who are mainly from the private sector.

¹³ According to the letters patent issued by the Registraire des entreprises du Québec, the name QIM was changed to Société AGIL OBNL (Société AGIL) on October 8, 2015, at the request of its administrators.

As part of our testing for fiscal 2017, we selected an invoice from the supplier "Société AGIL OBNL." We also consulted a report published by the BIG that concerned similar contracts granted to this body by a paramunicipal corporation.

Delegated Work Provider Mandate Awarded by the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

Here are extracts from the contract-awarding recommendation prepared and approved by the director general:

[TRANSLATION] "[...] It is recommended that a delegated work provider mandate be granted to the QIM to manage the project for restoring the remains of Fort Ville-Marie/William Collector, whose estimated construction budget is \$28,581,460, for fees equivalent to 4.224% of the construction budget, or a flat rate of \$1,207,281, which is in line with the budget;"

"The Museum negotiated fees in the amount of 4.224% of the construction budget, which is evaluated at \$28,581,460, which represents a rate in line with the market price and includes management of the work, management of budgets and timelines, quality control, the awarding of mandates and financial and administrative management, including monthly accountability reporting submitted to the City and the Museum, for the project as a whole;"

"To implement this project, on September 30, 2014, the Société's Board of Directors approved, in accordance with the Cities and Towns Act (section 573.2.1) and the City's Contract Management Policy, the granting of a management mandate by mutual agreement to the QIM, a non-profit organization specializing in urban construction accredited by the City."

We noted that the QIM launched calls for tenders in order to mandate commercial firms to implement these two projects in their entirety. These enterprises in turn billed the Société on the basis of the degree of completion of their work or according to the terms of payment.

The Société should have proceeded by launching a public call for tenders based on the general principle set forth in section 573 of the CTA. The Société could not avail itself of the exception provided in subsection 2.1 of section 573.3 to conclude such a contract by mutual agreement with the QIM, even if it has the status of a non-profit body.

Similarly, the QIM's fees were established on a monthly basis, not on the basis of the degree of completion of the project. The QIM's monthly invoices were not itemized and were issued according to an automatic schedule.

The Service was aware of issues with this supplier's operating methods, since it had itself terminated a similar agreement on October 8, 2015, that it had with the supplier as part of the "Quartier des spectacles" project. The BIG issued a report in March 2015 with similar observations.

We also noted that, in 2015, at the Service's request, the role of the QIM was changed to the project manager¹⁴; however, no amendment was made to the contract, and no contract appendix was signed.

The project was wrapped up in terms of costs in December 2019, after a release was signed following a dispute with the general contractor. The last invoice sent by the QIM to the Société dates from December 2017. However, the work on this project was not completed. In January 2018, the Société hired an employee of the Société AGIL to continue managing the project.

Based on the findings presented above, we question the fact that the Service considered the fees eligible, since:

- the invoices issued by the QIM and the Société AGIL included very few details and were not accompanied by supporting documents;
- the invoicing was not based on the progress of work for these two projects.

3.3.3. Other Findings in the Process of Awarding Contracts to the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

Contracts of \$25,000 and Over Granted by Mutual Agreement

Visual content for the William Collector – Contract by Mutual Agreement

The National Film Board (NFB) presented a short film project on the Franchère Bridge that will be presented as part of the William Collector exhibition. Since this project was not planned at the outset, the Société agreed to make an exception. In general, the Société awards several contracts in the artistic and cultural field on museum exhibition design and visual content protected by copyright, such as the multimedia show and other videos presented at exhibitions.

The Société requested legal advice after signing the contract. Although this advice should have been requested before the contract was granted, the contract states that the exception provided for in subsection 4 of section 573.3 in Appendix 5.4. of the CTA applies in this case.

Deadline for Receipt of Bids

We reviewed the deadlines for the receipt of bids for calls for tenders, both public and by invitation, except for contracts granted to self-employed workers for the Archéolab project. We found that the submission deadlines for three calls for tenders were non-compliant, as the following table shows.

¹⁴ The project manager manages the project and the Société awards contracts to businesses and pays all the invoices for the project (suppliers, professionals and contractors).

TABLE 12

Calls for Tenders for Which the Submission Deadline is Considered Non-Compliant

Contract Thresholds of the Ministère des Affaires municipales et de l'habitation ^[a]	Number in the SÉAO	SÉAO publication	SÉAO closing	Number of days
Provision of audiovisual and technological equipment Value: + \$365,700 Minimum period: 30 days	2019-REP-EQUIPEMENTS / 1305685	September 23, 2019	October 15, 2019	22
Provision of audiovisual and technological equipment Value: + \$365,700 Minimum period: 30 days	2018-MULTIMEDIA II-ÉQUIPEMENT	May 7, 2018	May 28, 2018	21
Provision and installation of movable shelving system Minimum period: 8 days ^[b]	N/A – Call for tenders by invitation	N/A	N/A	4

^[a] Publications of the Ministère des Affaires municipales et de l'habitation, muni express number 5 of April 27, 2018. Establishment, by Minister's Regulation, of the public tender threshold, of expenditure ceilings allowing the territory from which the tenders originate to be limited and minimum time for the receipt of tenders.

^[b] According to section 573.1 of the CTA.

Approval of Selection Committees and Analysis Grids

Under section 573.1.O.1.1 of the CTA, the Board of Directors (BD) must approve the evaluation and weighting criteria before calls for tenders are launched. Also under section 573.1.O.1.1 of the CTA, the BD must approve the appointment of selection committee members. The CTA allows the BD to delegate the tasks of approving evaluation criteria and appointing selection committee members to the director general.

We noted that the Société's BD did not delegate to the director general the task of approving the evaluation and weighting criteria before calls for tenders were launched for all projects. Furthermore, the Société's BD did not delegate to the director general the task of appointing selection committee members for all projects, except for the Fort Ville-Marie and the William Collector projects.

However, as the following table shows, these approvals were not made by the BD and are therefore not compliant with the CTA, since the BD did not either delegate this task to the director general.

TABLE 13

Summary of Approvals by the Société's BD for Selection Committees and Analysis Grids

Project	Approval of selection committees and analysis grids by the Board of Directors	Board of Directors' delegation of the task of approving selection committees to the director general	Board of Directors' delegation of the task of approving analysis grids to the director general
Fort Ville-Marie	No approval	Delegation approved by BD on March 25, 2015	No delegation approved by BD
William Collector			
2016–2018 TCWP	No approval	No delegation approved by BD	No delegation approved by BD
Multimedia			
Archéolab	No approval	No delegation approved by BD	No delegation approved by BD
Place D'Youville archaeological digs	No approval	No delegation approved by BD	No delegation approved by BD
2018–2020 TCWP	No approval	No delegation approved by BD	No delegation approved by BD

3.3.3.A. Recommendation

We recommend that the Service de la culture ensure that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, complies with both the Ville de Montréal's *Contract Management Policy* and the *Cities and Towns Act*, particularly with regard to the granting of contracts by mutual agreement, the minimum public tender thresholds, deadlines for the receipt of bids and the approval of evaluation criteria, pricing practices and the appointment of selection committee members.

3.4. Accounting Done by the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, to Record the Actual Costs of Each Project and Produce Financial Statements

Grant agreements require that the Société maintain appropriate accounts and records of amounts paid by the City. It also requires that the Société maintain accurate, adequate accounting which is separate from its operating activities and which reports the purposes for which these amounts were used. The Service uses the Société's audited annual financial statements for reporting purposes, as required by the grant agreement concluded with the City. However, the financial statements are not intended for project-level reporting and are consequently not sufficient.

3.4.1. Project Cost Accounting

As part of our audit, we tested several transactions recorded in the project accounts funded by the City. They include invoices from external suppliers paid by the Société, the Société's staff salaries and manual entries.

We noted that no supporting documents had been prepared on the date on which the manual entries were recorded in the project accounts. The Société had to do additional work to show the type and relevance of these entries as well as the reasons for recording them. We noted that there was poor management of the costs incurred and contract holdbacks recorded for projects, so there is a risk of duplicate entries for costs.

3.4.2. Accounting for Tangible Capital Assets in the Financial Statements of the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

The Société has no *Capitalization Policy*; it capitalizes all costs for projects subsidized by the City, not just costs of tangible capital assets. The Société therefore did not define tangible capital asset, which is an asset that has an estimated service life based on its type and its usefulness as part of the Museum's activities.

According to the accounting standards applicable to the Société, in terms of presentation in the financial statements, the main categories of tangible capital assets are identifiable assets that have a tangible, physical existence.¹⁵

In terms of presentation in the financial statements:

[TRANSLATION] “The main categories of tangible capital assets are established based on the type of capital assets in question (for example: land, buildings, equipment, leasehold improvements), the operating sector and/or the type of activities (such as: manufacturing, processing, distribution, building rental).”¹⁶

The capital assets accounted for in the financial statements and financial reports produced by the Société do not make it possible to ascertain the costs of each asset funded by the City. The grant applications concern solely the rehabilitation of the Société’s assets and other projects.

Furthermore, we noted that the Société capitalizes costs that are not capitalizable, such as feasibility studies, equipment lists as part of Museum projects, restoration of archaeological objects (all artifacts found in archaeological digs belong to the City), temporary exhibits and archaeological digs that are not associated with a specific capitalizable project. The City’s *Capitalization Policy* addresses archaeological dig costs. Assets must always be associated with their estimated service life.

Appendix 5.3. presents the table of all assets we observed during our audit and how the Société presents them in its financial statements.

3.4.2.A. Recommendation

We recommend that the Service de la culture ensure that the financial statements it uses for accountability reporting in the context of grants present its tangible capital assets in a manner consistent with the accounting policies.

¹⁵ Canadian Accounting Standards for non-profit organizations – Tangible capital assets held by not-for-profit organizations 4433.

¹⁶ Canadian Accounting Standards for non-profit organizations – Tangible capital assets held by not-for-profit organizations 4433.

3.5. Approval Process Within the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

Contract Approval

All the contracts in our selection were approved by the Société's Executive Office and the director general. The general bylaws specify the powers conferred on the members of the BD and the Executive Office.

According to the general bylaws, the Executive Office consists of five members, including the chair and the vice-chair(s) of the BD. Further, the person occupying the position of director general is required to sit on this committee. According to the general bylaws, this committee has the authority and exercises all the powers of the BD except for those that must be exercised by the BD under the *Canada Not-for-Profit Corporations Act*.

Members of the BD or the Executive Office delegated their power to approve contracts to the director general for some projects. These umbrella resolutions are listed below:

1. BD resolution of August 28, 2014 – Phase 2 of the Museum's expansion project (Fort Ville-Marie/William Collector) – \$100,000 and under: *[TRANSLATION] "That as part of Phase 2 of the Museum's expansion project, i.e., the planning and coordination of the project startup (demolition of the Fort Ville-Marie warehouse, execution of the Place D'Youville archaeological digs and calls for tenders for professional services), the Société authorize a financial delegation of up to \$100,000 to the director general for approval of contracts and invoices."*
2. BD resolution of March 25, 2015 – Phase 2 of the Museum's expansion project (Fort Ville-Marie/William Collector) – \$100,000 and over: *[TRANSLATION] "That the director general be authorized to sign any document necessary to give full effect hereto."*
3. Resolution of the Executive Office of May 2, 2017 – Phase 3 of the Museum's expansion project (Place D'Youville archaeological digs) – \$100,000 and under: *[TRANSLATION] "That as part of Phase 3 of the Museum's expansion project, the Société authorize a financial delegation of up to \$100,000 to the director general for approval of contracts and invoices."*

According to the minutes of proceedings from 2017 to 2019, which we consulted, no accountability reporting is described for contracts granted by the Executive Office to the BD. The observer member representing the City only sits on the BD and therefore does not receive any information on decisions made by the Executive Office of the BD on this subject.

Issue and Monitoring of Purchase Orders

After the Executive Office or the director general approves a contract, the officers in charge of accounting at the Société produce a PO showing all the relevant information of the contract, including the authorized amount. The amount on invoices sent by the supplier must not exceed the amount of the PO; to achieve this, tracking must be done by the accounting department.

The tracking of costs incurred versus the amount authorized on the PO is done manually, through a handwritten entry of the amounts paid on the invoices attached to a PO on a sheet. There is a risk that the accounting department will pay additional invoices exceeding the total amount approved by the director general on the PO.

We also noted that a revised PO had still not been issued to adjust the new total amount approved by the Executive Office.

4. Conclusion

The Ville de Montréal (the City) contributes a substantial amount in grants to bodies every year. Since 2011, the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière (the Société), has benefited from public grants of more than \$77 million to develop projects. This amount included more than \$53 million funded by the City, and more than \$21 million paid by the Québec government through the Ministère de la Culture et des Communications (MCCQ). From this standpoint, it is crucially important that the Service responsible for monitoring contribution agreements be equipped to ensure compliance with the contribution agreements.

Our audit led us to conclude that there is not always complete compliance with contribution agreements, which makes it impossible for the City to ensure that the contributions paid were used for the intended purposes. Our audit enabled us to conclude that the Société does not comply with all the clauses of agreements, including those that concern separate, adequate accounting for each project, the quality of the information contained in cost reports, and compliance with the City's *Contract Management Policy* (now the *City Council By-law concerning contract management*) and the *Cities and Towns Act*. Finally, we noted that the task of approving the granting of contracts is delegated to a committee of the Société's Board of Directors (BD) without any accountability reporting being submitted according to the minutes of meetings from 2017 to 2019 that we consulted.

Furthermore, we also noted that some costs were claimed after the agreement expired and that unused funds were transferred to fund other projects that were part of the 2016–2018 TCWP—without the necessary approvals being obtained beforehand.

While the Service de la culture (Service) regularly monitors the Société, the financial accountability reporting is not carried out in a timely manner, thereby presenting the Service with a *fait accompli* once the amounts are spent.

We reiterate that amounts paid to bodies are public funds and that we therefore consider it important to recommend that the City:

- revise contribution agreements so that they specify requirements concerning eligible costs at different stages of projects;
- ensure that the people involved in reviewing and interpreting cost reports have the necessary expertise or obtain external expertise for this purpose;
- incorporate into grant agreements the requirement of obtaining the final cost reports audited by an independent auditor for major projects funded by the City;
- ensure that the City's contributions are coordinated with any other funding source;
- validate that charged costs correspond to eligible costs according to the project contribution agreements and that the supporting documents substantiating cost reports are adequate;

- ensure that it has any amendments to agreements approved by the appropriate authorities;
- review the accountability reporting requirements so that it regularly obtains information it can use to assess project implementation;
- take the appropriate steps to ensure that the Société complies with the main requirements of its Contract Management Policy and the regulations in force.

We also issued recommendations to the MPAC. They can be found in Appendix 5.5.

5. Appendices

5.1. Objective and Evaluation Criteria

Objective

Ensure that agreements concerning financial contributions for development projects of Montreal Museum of Archaeology and History, Pointe-à-Callière (the Museum) granted by the Ville de Montréal to the Société are appropriately monitored and that these contributions are used for the intended purposes.

Evaluation Criteria

- The roles and responsibilities of the stakeholders involved are clearly defined, properly communicated and properly applied.
- The costs charged to funded projects are eligible and are supported by relevant documents.
- Monitoring mechanisms are established to ensure compliance with the provisions of agreements, laws and regulations in the granting of contracts.
- Monitoring and periodic accountability reporting mechanisms are established to report on the progress status of projects, their execution, the achievement of objectives and monitoring of the costs incurred.

5.2. Description of Projects

Project	Description	GDD number ¹⁷	City resolutions
Mariners' House	Transformation of the Mariners' House into multipurpose spaces, construction of a tunnel to connect the Mariners' House to the Éperon building and archaeological excavation in the Mariners' House basement. Archaeological excavations in the eastern and western areas of Place D'Youville.	1100387001 1123501001 1110387001 1132701124	CG11 0122 CG12 0200 CM11 0739 CA13 240696
Fort Ville-Marie	Development and construction work on the Fort Ville-Marie pavilion at 214 Place D'Youville South.	1140387002	CM14 1010
William Collector	Implementation of development and infrastructure work on public domain assets, particularly a portion of the old William Collector, in order to make it accessible.	1151146001	CM15 0666
2014–2016 TCWP	Production of overall signage, renewal of permanent exhibitions and renewal of technological, Museum and preservation equipment.	1140387003	CM15 0311
2016–2018 TCWP Multimedia	Renewal of the multimedia show, replacement of part of the permanent exhibitions, renewal of public safety and the public announcement system, replacement of technological and Museum equipment, and installation of reception facilities and utility systems.	1167486001 1177233008	CM17 0727 CM17 1371
Archéolab	Archaeology reference collection.	1177233003	CM17 0446
Place D'Youville archaeological digs	Place D'Youville archaeological digs project of St. Ann's Market and the Parliament of the United Province of Canada at Place D'Youville West.	1177233004	CM17 0456

¹⁷ GDD: Système de gestion des décisions des instances.

Project	Description	GDD number ¹⁷	City resolutions
2018–2020 TCWP	<p>At the Éperon building, renewal of all Museum remains installations, restoration of the first Catholic cemetery, rotation of artifacts and reorganization of access to the Éperon building after the first collector sewer was unveiled and access to the collector. Replacement of technological and Museum equipment. Operations on the ground floor, upstairs and in the permanent exhibition spaces of the Old Custom House. Preservation and stabilization of remains, and masonry work in the archaeological crypt.</p>	1181654003	CM18 0816

5.3. Category of Asset Identified According to the Audit Conducted by the Bureau du vérificateur général

Project	Assets identified according to the audit conducted by the Bureau du vérificateur général	Category of asset presented in financial statements
Fort Ville-Marie	Land Building In situ remains Permanent exhibition ^[a] Technical and technological equipment ^[b] Computer equipment ^[c] Furniture for public spaces Storage and warehousing system Office furniture and equipment ^[c]	Buildings
William Collector	In situ remains Permanent exhibition ^[a] Technical and technological equipment ^[b]	
2016–2018 TCWP (excluding the multimedia show renewal)	Improvements to buildings Permanent exhibition ^[a] Technical and technological equipment ^[b] In situ remains Furniture for public spaces Office furniture and equipment ^[c]	Permanent exhibitions
Multimedia (multimedia show)	Improvements to buildings Permanent exhibition ^[a] Technical and technological equipment ^[b]	Multimedia
Archéolab	Not identified ^[d]	Multimedia
Place D'Youville archaeological digs	Not identified	Permanent exhibition

Project	Assets identified according to the audit conducted by the Bureau du vérificateur général	Category of asset presented in financial statements
2018–2020 TCWP	Improvements to buildings Permanent exhibition ^[a] Technical and technological equipment ^[b] In situ remains Furniture for public spaces	Permanent exhibitions

^[a] Museology, multimedia or interactive content protected by copyright (videos, short films and other) and other content (text, photos and other).

^[b] Installation of technical and technological equipment that is an integral part of the museology of the Museum’s permanent exhibitions.

^[c] For the Société’s general administrative purposes.

^[d] The updating or addition of content (text, images and other multimedia documents) for the Archéolab Québec platform does not constitute assets. The updating and maintenance of the technological platform are under the responsibility of the Ministère de la Culture.

5.4. Extracts from Section 573.3 of the Cities and Towns Act

Sections 573 and 573.1 and any regulation made under section 573.3.0.1 or 573.3.0.2 do not apply to a contract:

...

2.1 that is entered into with a non-profit body and that is an insurance contract or a contract for the supply of services other than services listed in subsubsection 2.3 and other than services involving the collection, transport, transfer, recycling or recovery of residual materials;

...

2.3 that is a contract entered into with a non-profit body and involving an expenditure below the expenditure ceiling allowing the territory from which the tenders originate to be limited in the case of contracts for the supply of services under subsection 2.1 of section 573, and whose object is any of the following: [...] [sub-items not presented in order to simplify the appendix; refer to the legislative text for more details]; 2.4 that is a supply contract entered into with a non-profit body and involving an expenditure below the expenditure ceiling allowing the territory from which the tenders originate to be limited in the case of supply contracts under subsection 2.1 of section 573;

...

4 whose object is the supply of movable property or services related to cultural or artistic fields or the supply of subscriptions;

5 whose object is the supply of media space for the purposes of a publicity campaign or for promotional purposes;

6 whose object, which stems from the use of a software package or software product, is to:

- a) ensure compatibility with existing systems, software packages or software products;
- b) ensure the protection of exclusive rights such as copyrights, patents or exclusive licences;
- c) carry out research or development;
- d) produce a prototype or original concept.

...

If a professional services contract for the drawing up of plans and specifications was the subject of a call for tenders, section 573.1 and any regulation made under section 573.3.0.1 do not apply to a contract entered into with the designer of those plans and specifications for:

1 their adaptation or modification for the carrying out of the work for the purposes for which they were prepared; or

2 the supervision of the work related to such modification or adaptation or, within the scope of a fixed-price contract, related to an extension of the duration of the work.

Section 573.1 does not apply to a contract:

1 covered by the regulation in force made under section 573.3.0.1 or 573.3.0.2;

...

5.5. Recommendations for the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière

5.5.A. Recommendation

We recommend that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, review its contract management practices to ensure that they comply with both the *Cities and Towns Act* and the Ville de Montréal's *By-law concerning contract management*.

5.5.B. Recommendation

We recommend that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, obtain written approval from the Ville de Montréal concerning changes in the extent of projects, the use of surplus project funds to offset deficits in projects covered by the Three-year capital works program and the extension of project implementation deadlines set forth in agreements.

5.5.C. Recommendation

We recommend that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, ensure that all suppliers issue itemized invoices for each project funded by the Ville de Montréal to properly identify the people involved, the hours they worked and the description of services they provided, in order to comply with the agreements signed with the Ville de Montréal.

5.5.D. Recommendation

We recommend that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, maintain adequate separate accounting for each project funded by the Ville de Montréal as required by grant agreements and ensure that the accounting system reflects the actual costs of projects.

5.5.E. Recommendation

We recommend that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, ensure that the delegation of any powers by the Board of Directors to the director general, particularly in the area of contract approval, is approved and is subject to a Board of Directors resolution and accountability reporting to the Board of Directors.

5.5.F. Recommendation

We recommend that the Société du musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, adopt a capitalization policy in order to properly identify the costs of tangible capital assets.





4.

Budget Process

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



4.1.

Processus budgétaire - volet fonctionnement

Le 27 mai 2021

RAPPORT ANNUEL 2020

Bureau du vérificateur général
de la Ville de Montréal

*The translated text is currently
in translation and will be available
and published in early July 2021.*

Processus budgétaire – volet fonctionnement

Dans un contexte municipal, le budget représente un véhicule de communication qui permet à une ville d'informer la population des orientations prises et des choix stratégiques faits pour déterminer le niveau de taxation et le niveau de service des différents secteurs d'activités municipales. Il permet aussi d'allouer les ressources en conséquence. Ainsi, pour être en mesure de produire un budget, la Ville de Montréal (la Ville) doit disposer d'un processus structuré.

La Ville a adopté, pour l'exercice 2021, un budget de fonctionnement de 6,17 milliards de dollars (G\$) dont 64,7% des activités sont financées par des revenus de taxation de 4 G\$. Quant aux dépenses qui sont équivalentes aux revenus, elles sont réparties en 13 activités. La rémunération représente à elle seule un budget de 2,5 G\$ soit 40,9% des dépenses budgétées. La deuxième composante importante du budget correspond au service de la dette brute, qui s'élève à 1,1 G\$ soit 17,2% des dépenses prévues en 2021.

Le processus budgétaire est complexe, il est régi par plusieurs lois et politiques financières. Il débute en janvier avec l'élaboration du cadre financier préliminaire menant à la détermination des orientations et se termine en décembre par l'approbation du budget par les instances. De plus, il nécessite la participation d'un grand nombre de personnes réparties dans différentes unités d'affaires et couvre l'île de Montréal, soit le territoire de l'agglomération qui comprend 16 villes liées soit la Ville (composée de 19 arrondissements) et les 15 municipalités reconstituées.

Plusieurs systèmes d'information sont mis à contribution pour la confection du budget, de même que plusieurs fichiers Excel pour cumuler et traiter l'information requise pour établir les prévisions.

Mise en
contexte

Objectif de l'audit

S'assurer que le processus supportant la confection du budget de fonctionnement de la Ville est efficace et rigoureux.

La Ville s'est dotée d'un cadre de gestion spécifique au processus budgétaire et de mécanismes formels de prise de décisions à l'égard des orientations déterminées pour atteindre l'équilibre budgétaire. Néanmoins, nous avons constaté que le cadre financier préliminaire élaboré pour présenter des projections financières quinquennales et éclairer la prise de décisions se concentre sur le budget de la prochaine année. Il n'est pas suivi d'un cadre financier quinquennal équilibré qui exposerait les risques et les défis des projections actuelles ce qui est essentiel dans le contexte où le déséquilibre budgétaire structurel de la Ville augmente.

Le processus budgétaire n'est pas inscrit dans une démarche globale de planification. Des priorités organisationnelles communiquées par la Direction générale servent de toile de fond, sans toutefois que le budget des unités d'affaires soit nécessairement établi en fonction de celles-ci, de leurs activités ou du niveau de service.

La méthode actuelle pour déterminer les orientations et les enveloppes budgétaires aux unités d'affaires repose plutôt sur la gestion des écarts de revenus et de dépenses par rapport au budget adopté l'année précédente. Ainsi, bien que certaines prévisions soient bien établies, nos travaux ont révélé l'existence de surestimations et de sous-estimations d'année en année pour certaines catégories de revenus et de dépenses. Ceci a pour conséquence de reconduire des écarts année après année et de compromettre l'imputabilité des unités d'affaires.

Les transferts centraux accordés aux arrondissements ont fait l'objet de certains ajustements, mais ils n'ont pas été réévalués en profondeur depuis la réforme de leur financement de 2014 pour déterminer s'ils reflètent bien leurs besoins actuels et si les paramètres utilisés sont toujours appropriés. Or, le modèle de financement devait être révisé après cinq ans.

De plus, l'information publiée ne permet pas d'évaluer la performance budgétaire de la Ville; elle porte sur une année seulement et ne permet pas de connaître la tendance des écarts entre les prévisions et les résultats historiques.

La confection du budget de fonctionnement de la Ville, totalisant 6,17 G\$ repose en grande partie sur une multitude de fichiers Excel et d'applications désuètes qui ne sont plus supportées par les fournisseurs et ont exigé au fil du temps la mise en place de contrôles compensatoires pour atténuer les risques.

Il est impératif que la Ville revoie son processus budgétaire et qu'elle se dote de systèmes budgétaires et financiers performants afin qu'elle soit mieux outillée pour faire face aux enjeux actuels et à venir.

Principaux constats

Cadre financier

- Le cadre financier se concentre sur le budget de la première année ce qui rend difficile la prise en compte des conséquences sur les quatre années à venir. Aucun cadre quinquennal équilibré n'est préparé et publié dans le cadre du budget annuel.
- Le cadre financier ne respecte pas les pratiques financières préconisées par la Ville tant au niveau de la documentation que de la prise en compte des résultats réels historiques.
- Bien que la Ville ait déposé son plan stratégique *Montréal 2030*, le cadre financier ne reflète pas encore les priorités de l'Administration municipale.

Établissement des prévisions de revenus et de dépenses

- Certaines des hypothèses utilisées ne sont pas supportées par une documentation appropriée contrairement à ce qui est préconisé par la *Politique de l'équilibre budgétaire* de la Ville.
- Nos analyses démontrent que la méthode utilisée pour établir les prévisions de revenus et de dépenses génère des surévaluations ou des sous-évaluations d'année en année; ainsi le budget ne présente pas clairement les sources de financement et les dépenses prévues.

Détermination des orientations et confection des enveloppes budgétaires

- Les décisions prises lors de la détermination des orientations budgétaires ne sont pas documentées et la méthode pour attribuer les enveloppes budgétaires aux unités d'affaires ne tient pas compte des analyses de coûts historiques ou futurs par activité. Elle repose plutôt sur la gestion des écarts de revenus et de dépenses par rapport au budget adopté l'année précédente.
- En l'absence d'évaluations et de balises, quant au niveau de service ou d'activité lié aux dépenses budgétées, l'imputabilité des services s'en trouve compromise.
- Aucune analyse n'a été effectuée pour évaluer si les transferts centraux, déterminés lors de la réforme du financement des arrondissements en 2014, reflètent bien leurs besoins actuels, s'ils sont représentatifs des compétences qui leur sont dévolues et des services aux citoyens, et s'ils correspondent à leur juste part des taxes perçues par la ville-centre pour ces services, et ce, malgré qu'ils devaient être révisés après cinq ans.
- Des sommes sont distribuées aux arrondissements, ou réduites des transferts accordés par la ville-centre, alors qu'elles ne sont pas budgétées, ce qui ne favorise pas la transparence budgétaire et l'allocation optimale des ressources lors de la confection du budget.

Arbitrage, consolidation et adoption du budget

- Il n'existe pas de critères officiels de priorisation pour appuyer le processus décisionnel relatif à l'acceptation des nouvelles demandes budgétaires ou pour procéder à des coupures du budget de fonctionnement.
- En ce qui concerne les budgets des arrondissements audités, les documents publiés lors de leur présentation aux conseils d'arrondissement contenaient une information insuffisante et très sommaire dans certains cas.
- Aussi, le fait que les prévisions de dépenses de certains arrondissements soient présentées par activités, alors que le budget global de la Ville les présente par objets, fait en sorte que les instances et les citoyens peuvent difficilement faire le lien entre ces deux types d'information afin d'apprécier le budget de même que la nature et l'évolution des dépenses.

Outils et ressources humaines impliqués dans la confection du budget

- Le système budgétaire utilisé date des années 90. En 2009, une étude faisait déjà état de l'urgence de remplacer ces systèmes désuets et de leur inefficacité à livrer une information pertinente, en temps voulu, et exempt de risques d'erreurs. Ce projet a été reporté à deux reprises faute de ressources humaines et financières. La confection du budget de fonctionnement de la Ville, totalisant 6,17 G\$, repose en grande partie sur une multitude de fichiers Excel et d'applications qui ne sont pas intégrées.
- Considérant la limitation et la désuétude des systèmes, les ressources humaines affectées à la confection du budget consacrent une grande partie de leur temps à effectuer des tâches cléricales, plutôt qu'à planifier et à faire plus d'analyses à valeur ajoutée. De plus, la relève de certains postes-clés n'est pas assurée à l'heure actuelle.

En marge de ces résultats, nous avons formulé différentes recommandations aux unités d'affaires qui sont présentées dans les pages suivantes. Ces unités d'affaires ont eu l'opportunité de donner leur accord relativement aux recommandations.



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Liste des sigles

CA	conseil d'arrondissement	M\$	million de dollars
CE	comité exécutif	RDD	registre des décisions
CFA	Commission sur les finances et l'administration	RFA	réforme du financement des arrondissements
CG	conseil d'agglomération	SAJ	Service des affaires juridiques
CM	conseil municipal	SBA	système budgétaire automatisé
CMM	Communauté métropolitaine de Montréal	SCA	Service de concertation des arrondissements
DCSF	Direction du conseil et du soutien financier	SE	Service de l'eau
DGA	directeur général adjoint	SF	Service des finances
G\$	milliard de dollars	SPVM	Service de Police de la Ville de Montréal
la Charte	Charte de la Ville de Montréal, métropole du Québec	SRH	Service des ressources humaines
LCV	<i>Loi sur les cités et villes</i>	STI	Service des technologies de l'information

Glossaire

Arrondissement

Division territoriale, administrative et politique. La Ville de Montréal est divisée, pour l'exercice de certaines compétences, en 19 arrondissements considérés comme des unités d'affaires.

Assiette fiscale

Montant auquel s'applique un taux d'imposition ou de taxation. Dans le contexte d'une municipalité, il s'agit du rôle foncier soit la valeur des immeubles commerciaux et résidentiels.

Budget

Le budget de fonctionnement assure la gestion des affaires courantes : il permet de couvrir les frais liés aux services offerts à la population, tels que le déneigement, la sécurité publique, les loisirs et l'alimentation en eau potable. La principale source de financement du budget provient des taxes municipales.

Charte de la Ville de Montréal, métropole du Québec

Loi québécoise qui contient les dispositions ayant trait à la constitution, à l'organisation, aux compétences et aux pouvoirs de cette municipalité. S'y trouvent notamment les règles régissant l'harmonisation de la fiscalité municipale.

Comité de budget administratif

Le comité de budget administratif, piloté par le Directeur général, est responsable de formuler des propositions au Comité de budget politique, ainsi que de s'assurer que toutes les décisions et orientations budgétaires sont reflétées dans les budgets des unités de la Ville.

Comité de budget politique

Le comité de budget politique est le lien décisionnel entre les décisions politiques et la mise en œuvre administrative.

Cotisations de l'employeur

Poste de dépenses formé des avantages sociaux (divers programmes d'assurance, cotisations à un régime de retraite, etc.) et des charges sociales (cotisations à la RRQ, à l'assurance-emploi, à la CNESST, au Fonds de santé) accordés aux élus et aux employés.

Coûts des régimes de retraite

Les coûts des régimes de retraite se regroupent en deux grandes catégories :

- les coûts des services courants, qui représentent la part de l'employeur aux services rendus au cours de l'exercice;
- les coûts des services passés ou autres composantes reliées aux régimes de retraite, qui incorporent les coûts relatifs aux impacts des modifications de régimes, de l'amortissement des gains et pertes actuariels, de la variation de la provision pour moins-value et de la charge d'intérêts à ces régimes.

Dépenses par objets

Système de classification des dépenses établi en fonction de la nature économique des biens et des services et défini dans le Manuel de la présentation de l'information financière municipale. La classification regroupe les dépenses parmi les objets qui suivent : rémunération; cotisations de l'employeur; transport et communications; services professionnels, techniques et autres; location, entretien et réparation; biens durables; biens non durables; frais de financement; contributions à d'autres organismes; autres objets.

Dettes

Somme due à un ou plusieurs créanciers.

Droits sur les mutations immobilières

Revenus provenant des droits imposés à l'acquéreur à la suite d'une transaction immobilière.

Organisme paramunicipal

Entité à but non lucratif qui est dotée, dans les conditions prévues par la loi, d'une personnalité juridique et qui entretient des liens d'affaires avec la Ville.

Rémunération

Rubrique qui comprend les salaires et les indemnités des élus et des employés.

Service central

Entité administrative, ou unité d'affaires, qui assure des fonctions de planification et de soutien à l'Administration et aux arrondissements. Un service central peut également cumuler des responsabilités opérationnelles.

Service de la dette

La dette de la Ville comprend l'ensemble des emprunts qu'elle a contractés. Une portion de celle-ci est remboursée annuellement et est incorporée dans les dépenses prévues au budget de fonctionnement. C'est ce que l'on appelle le service de la dette.

Unité d'affaires

Entité qui désigne un arrondissement ou un service central.

Organisme du périmètre comptable

Les organismes du périmètre comptable se définissent comme étant les organismes dont les activités et les ressources financières sont présentées dans les états financiers de la Ville et lesquels sont sous son contrôle selon les critères établis par les Normes comptables canadiennes du secteur public.

Territoires

Agglomération de Montréal

Le territoire des 16 villes constituant l'île de Montréal ou (tout simplement) l'île de Montréal.

Municipalité locale

- Les municipalités locales n'ont pas toutes les mêmes désignations: le même terme désigne aussi bien une ville, une municipalité, un village, une paroisse ou un canton (source: MAMH).
- La municipalité locale est administrée par un conseil municipal (source: MAMH).

Ville centrale (ou Ville centre)

- La Ville de Montréal, en relation avec les autres municipalités locales de l'agglomération de Montréal.
- La Ville centrale exerce les compétences d'agglomération sur le territoire de l'île de Montréal et les compétences locales sur le territoire de Montréal, au moyen d'une instance officielle, selon le cas: le conseil d'agglomération, le conseil municipal ou le conseil d'arrondissement.

Villes reconstituées

- Les 15 territoires de l'île de Montréal qui ont retrouvé leur statut de municipalité au 1er janvier 2006, excluant le territoire de la ville résiduaire.
- Les villes reconstituées sont responsables des services locaux (aussi appelés services de proximité) sur leurs territoires respectifs.

Villes liées

Les 16 municipalités constituant le territoire de l'île de Montréal (soit les 15 villes reconstituées et Montréal) et siégeant au conseil d'agglomération de Montréal.

Compétences

Compétences d'agglomération

Le conseil d'agglomération ou le comité exécutif exerce les compétences d'agglomération prescrites par la loi, c'est-à-dire qu'il est responsable des services d'agglomération offerts à l'ensemble de la population de l'île de Montréal par la Ville centrale, c'est-à-dire la Ville de Montréal.

Services d'agglomération

L'ensemble des services communs fournis par la Ville de Montréal aux résidents de l'île de Montréal.

Compétences locales

- Le conseil municipal de chaque ville de l'île de Montréal exerce les compétences locales prescrites par la loi, c'est-à-dire qu'il est responsable des services locaux offerts sur le territoire de sa municipalité.
- Les responsabilités exercées par les municipalités locales sont aussi appelées services de proximité.
- Dans le cas de Montréal, la Charte de la Ville de Montréal prévoit que ces compétences locales sont partagées entre le conseil municipal et les conseils d'arrondissement. Celles-ci sont donc:
 - soit des compétences locales gérées par les arrondissements;
 - soit des compétences locales gérées par le conseil municipal.

■ Source: Principalement du document *Montréal – Budget 2021 – PDI 2021-2030*.

1. Contexte

Le budget annuel est un outil de gestion et de planification qui englobe l'ensemble des revenus et des dépenses pour assurer le fonctionnement d'une organisation pour une année donnée. Le budget permet de planifier les actions qui seront entreprises à court terme par l'organisation.

Dans un contexte municipal, il s'agit également d'un véhicule de communication qui permet à une ville d'informer la population des orientations prises et des choix stratégiques faits pour déterminer le niveau de taxation et le niveau de service des différents secteurs d'activités municipales.

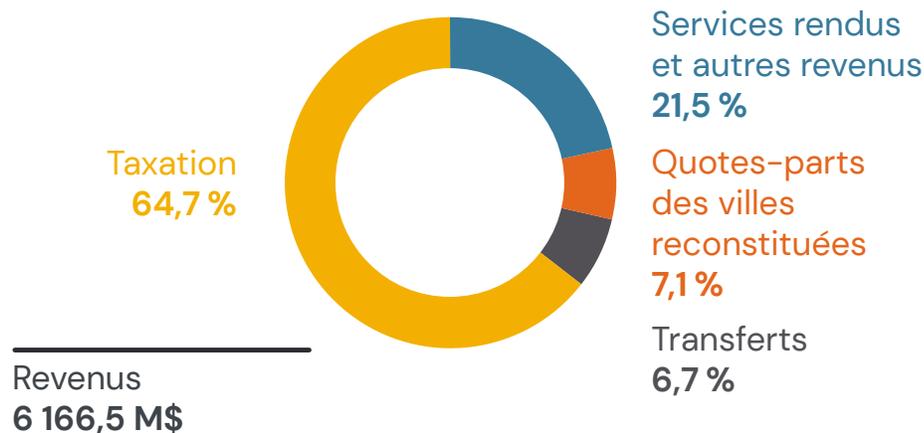
Pour être en mesure de produire un budget, l'organisation doit mettre en place un processus structuré. Ce processus budgétaire permet d'établir la stratégie, les objectifs et d'allouer les ressources en conséquence, et il repose généralement sur une planification stratégique s'appuyant sur une vision à long terme de l'organisation.

1.1. Budget de fonctionnement 2021 de la Ville de Montréal

La Ville de Montréal (la Ville) a adopté, pour l'exercice 2021, un budget de fonctionnement de 6,17 milliards de dollars (G\$) dont 64,7% des activités sont financées par des revenus de taxation de 4 G\$ comme le démontre la figure 1.

FIGURE 1

Budget 2021 – Provenance des revenus

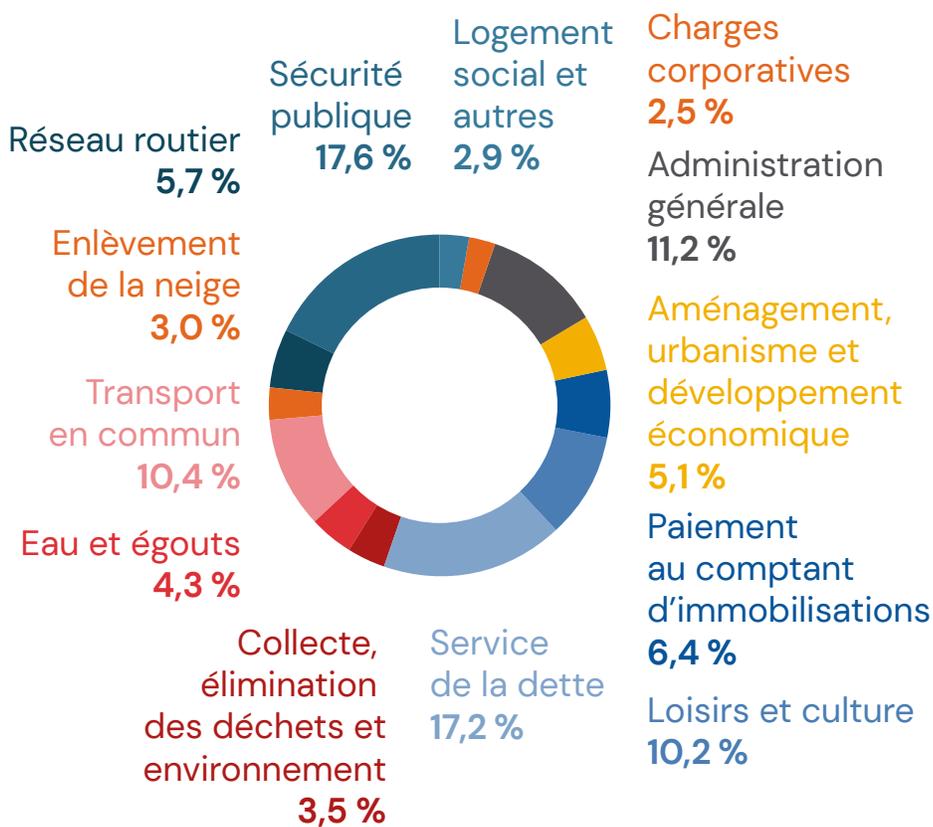


Source: Document *Montréal – Budget 2021 – PDI 2021-2030*, page 21 (33/446 du PDF).

Quant aux dépenses qui sont équivalentes aux revenus, elles sont réparties en 13 activités dont les principales sont: les activités liées à la sécurité publique (la protection contre les incendies et la police), aux loisirs et à la culture, au transport en commun ainsi qu'au service de la dette comme illustré à la figure 2.

FIGURE 2

Budget 2021 – Répartition des dépenses par activités

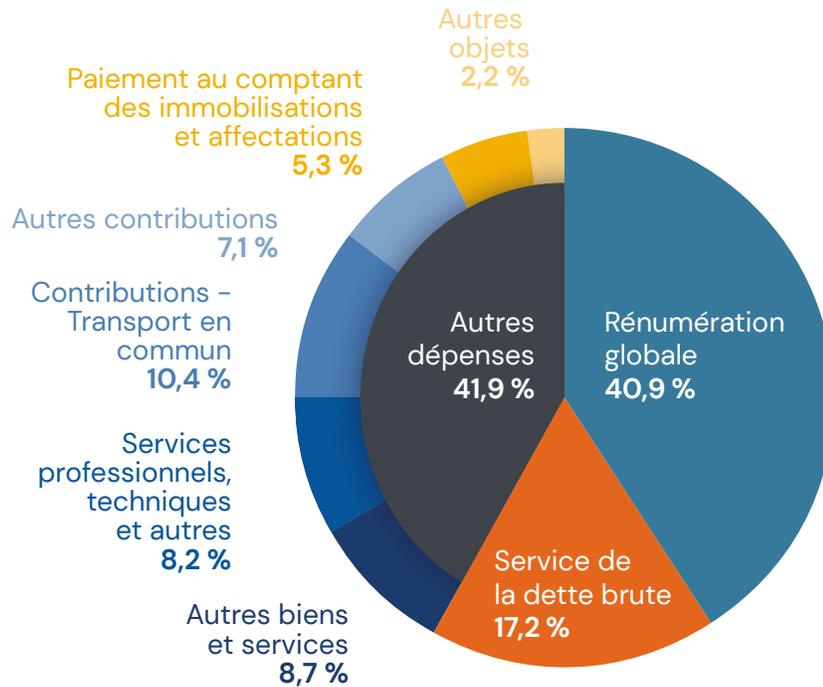


Source: Document *Montréal – Budget 2021 – PDI 2021-2030*, page 21 (33/446 du PDF).

Le budget de la rémunération globale de 2,5 G\$ représente 40,9% des dépenses budgétées. Cela correspond à un effectif autorisé de 22 665 années-personnes. Le service de la dette brute, autre composante importante du budget, s'élève à 1,1G\$ soit 17,2% des dépenses prévues en 2021. La figure suivante présente la répartition des dépenses par objets présentée au budget 2021.

FIGURE 3

Répartition des dépenses par objets



Source: Document *Montréal – Budget 2021 – PDI 2021-2030*, page 219 (291/446 du PDF).

L'île de Montréal représente le territoire de l'agglomération qui comprend 16 villes liées soit, la Ville (composée de 19 arrondissements) et les 15 villes reconstituées. En tant que responsable de l'agglomération, c'est donc à près de 2 millions de citoyens que la Ville offre ses services. L'annexe 5.2. présente le territoire de l'agglomération de Montréal.

1.2. Encadrement légal et administratif

Dans une municipalité, la responsabilité de la préparation du budget est dévolue au Directeur général par la *Loi sur les cités et villes* (LCV) (RLRQ, chapitre C-19). À titre de responsable de l'Administration municipale, il a notamment pour fonctions de préparer le budget, le programme d'immobilisations, les plans, les programmes et les projets destinés à assurer le bon fonctionnement de la Ville et de soumettre le budget au conseil municipal (CM), au comité exécutif (CE) ou à une commission, selon le cas, avec ses observations et ses recommandations.

La LCV mentionne également que le CM doit préparer et adopter le budget pour le prochain exercice financier et y prévoir des revenus au moins égaux aux dépenses qui y figurent. Un certificat du trésorier annexé au budget doit être préparé par le trésorier ou le directeur des finances, afin d'attester que les crédits budgétaires seront disponibles pour les charges prévues au budget.

La *Charte de la Ville de Montréal, métropole du Québec* (la Charte) (RLRQ, chapitre C-11.4) précise que le CE prépare et soumet au CM le budget annuel de la Ville. L'adoption du budget doit être faite par le CM et cette compétence qui lui est attribuée ne peut être déléguée. Aussi, elle mentionne qu'un conseil d'arrondissement (CA) peut formuler des avis et faire des recommandations au CM sur le budget et sur l'établissement des priorités budgétaires.

Il est également prévu dans la Charte que chaque CA dresse et transmette au CE un budget qui prévoit des revenus au moins égaux aux dépenses qui y figurent. Les CA sont responsables de la gestion du budget adopté par le CM dans le respect des normes édictées par ce dernier. La Charte prévoit aussi que le trésorier atteste que les crédits budgétaires seront disponibles pour les charges prévues au budget de fonctionnement sous la responsabilité du CM et celles du conseil d'agglomération (CG).

Le cadre législatif prévoit que la Ville, à titre de municipalité centrale, exerce les compétences d'agglomération¹ sur l'ensemble du territoire de l'île de Montréal, y compris celui des 15 villes reconstituées. Le budget de la Ville doit donc inclure toute dépense faite dans l'exercice de ces compétences, ainsi que les revenus de quotes-parts des villes liées de l'agglomération pour payer sa part de ces dépenses. Aussi, les prévisions de revenus et de dépenses liés à ces compétences doivent être distingués dans le budget de celles relatives à l'exercice des autres compétences et doivent être approuvés par le CG.

Les dispositions précisant les compétences d'agglomération, de même que les compétences centrales et celles des arrondissements, sont présentées dans la *Loi sur l'exercice de certaines compétences municipales dans certaines agglomérations* (RLRQ, chapitre E-20.001), le décret concernant l'agglomération de Montréal² et la Charte. La figure suivante présente le modèle organisationnel et le partage des compétences à la Ville.

¹ Les compétences d'agglomération sont présentées à l'annexe 5.3.

² Décret 1229-2005, 8 décembre 2005, gouvernement du Québec.

FIGURE 4

Modèle organisationnel et partage des compétences



Source: Document *Montréal – Budget 2021 – PDI 2021-2030*, page 334 (410/446 du PDF).

D'autres lois générales contiennent des dispositions particulières devant être prises en compte pour la confection du budget, notamment la *Loi sur la fiscalité municipale* (RLRQ, chapitre F-2.1), la *Loi sur les dettes et emprunts municipaux* (RLRQ, chapitre D-7) la *Loi concernant les droits sur les mutations immobilières* (RLRQ, chapitre D-15.1).

De plus, la Ville a adopté plusieurs politiques financières afin de s'assurer d'une saine gestion des fonds publics. Ces politiques énoncent des pratiques de gestion financière pour l'ensemble des affaires de la Ville et servent de guide à la prise de décisions pour le CE, le CM, le CG et le CA ainsi que pour l'ensemble des gestionnaires et des sociétés paramunicipales. Les politiques suivantes encadrent plusieurs aspects liés à la confection du budget de fonctionnement :

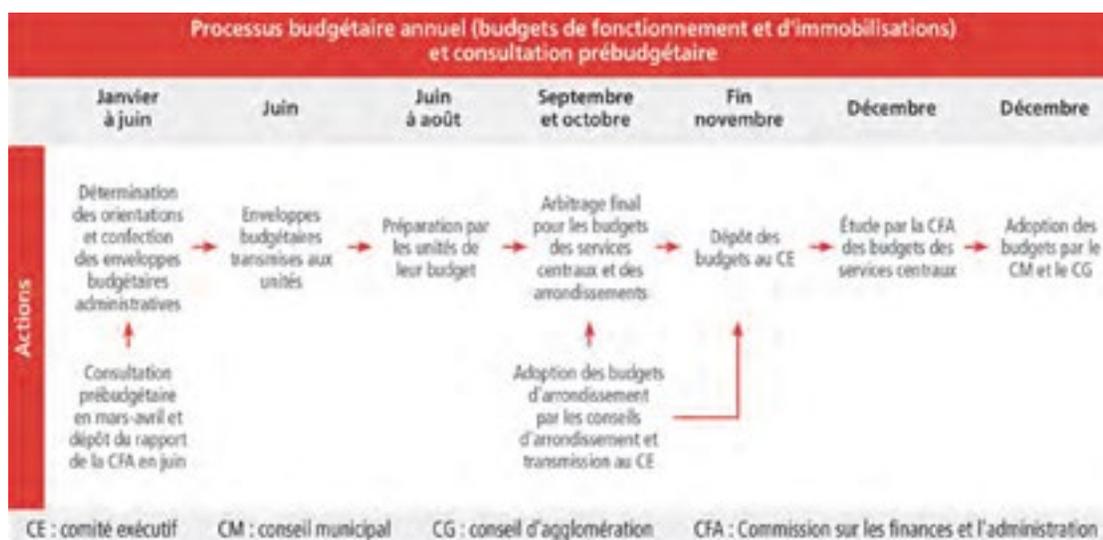
- *Politique de l'équilibre budgétaire;*
- *Politique des sources de revenus;*
- *Politique de gestion des dépenses;*
- *Politique de gestion de la dette;*
- *Politique de gestion des excédents de fonctionnement (surplus affectés et non affectés).*

1.3. Rôles et responsabilités

Le processus budgétaire de la Ville implique plus d'une cinquantaine d'unités d'affaires qui doivent produire leur budget de façon décentralisée selon les directives émises par le Service des finances (SF). La figure suivante illustre le cycle du processus budgétaire annuel.

FIGURE 5

Schéma du processus budgétaire à la Ville de Montréal



Source: Document *Montréal – Budget 2021 – PDI 2021-2030*, page 1 (71/446 du PDF).

Au SF, sous la responsabilité du trésorier, deux directions sont principalement impliquées dans la confection du budget de fonctionnement, soit la Direction du budget et de la planification financière et fiscale (ci-après « Direction du budget ») et la Direction du conseil et du soutien financier (DCSF).

La Direction du budget est responsable de l'entièreté du processus budgétaire décrit à la figure 5 et en assure le suivi.

La DCSF appuie les services centraux dans la confection de leur budget. Son équipe est notamment responsable de la validation des données budgétaires des services avec le registre de postes et de s'assurer que leur structure organisationnelle est à jour. Elle est également responsable de la mise à jour du registre des décisions (RDD) afin de colliger l'information et de veiller à ce que toutes les décisions des instances ayant un impact budgétaire soient considérées dans le budget de fonctionnement des services.

Les services peuvent également compter sur leurs directeurs généraux adjoints (DGA) qui sont membres des comités de budget administratif et politique. Les DGA font le suivi de la confection du budget des services dont ils sont responsables et de l'évolution des résultats en cours d'année. Ils sont au fait des problématiques, des enjeux et des nouvelles réalités des services.

D'autres directions du SF participent au processus budgétaire, notamment la Direction du financement, placement et trésorerie et la Direction de la comptabilité et des informations financières. Elles contribuent à l'élaboration de certaines hypothèses et prévisions de même qu'à la préparation du document budgétaire.

Les arrondissements, quant à eux, disposent de leurs propres équipes financières. Ils sont responsables de leur budget respectif et doivent le préparer en fonction des orientations et des instructions fournies par la Direction du budget.

D'autres services contribuent au processus budgétaire et à la confection du document budgétaire. Le Service des ressources humaines (SRH) fournit l'information nécessaire pour déterminer les prévisions de dépenses relatives à la rémunération et aux cotisations de l'employeur. Le Service du greffe prépare les présentations des services à la Commission sur les finances et l'administration (CFA) et organise les processus d'adoption du budget par le CM et le CG. Le Service de l'expérience citoyenne et des communications prépare notamment les documents de communication et les diffuse.

En ce qui a trait au processus décisionnel, deux comités sont impliqués avant que le budget soit soumis au CE et à la CFA, et par la suite adopté par le CM et le CG. Ces comités, soit le comité de budget politique et le comité de budget administratif, font le lien entre les décisions politiques et la mise en œuvre administrative et ils formulent et étudient différentes propositions. L'annexe 5.3. présente le processus décisionnel menant à l'adoption du budget ainsi que la composition et le rôle des instances et les comités qui y prennent part.

1.4. Systèmes et outils utilisés pour la confection du budget

Plusieurs systèmes d'information sont mis à contribution pour la confection du budget, de même que plusieurs fichiers Excel pour cumuler et traiter l'information requise pour établir les prévisions.

Un système a été développé dans les années 90 pour la préparation du budget de fonctionnement, soit l'application système budgétaire automatisé (SBA). Le registre de postes sous la responsabilité du SRH, ainsi que l'application PRÉVIS, sont utilisés pour les prévisions de dépenses de rémunération. Un outil est aussi utilisé pour la consolidation des données budgétaires et des données financières réelles provenant du système intégré de gestion SIMON, soit le système VISION II. De nombreuses applications, tables de correspondance, interfaces et passerelles ont été développées afin que ces systèmes puissent communiquer entre eux. L'annexe 5.4. présente un portrait des systèmes d'information présentement utilisés pour la confection du budget.

Un projet visant le remplacement de l'application SBA par une nouvelle solution intégrée est prévu depuis plusieurs années. Des travaux à cet effet sont planifiés en 2024 et devraient permettre d'éliminer la saisie de données et les tables de correspondance entre les différents systèmes.

Un mandat d'audit de performance en audit des technologies de l'information a été conduit en 2020 sur l'application SBA. Nos conclusions sont consignées dans un rapport émis distinctement.

2. Objectif de l'audit et portée des travaux

En vertu des dispositions de la LCV, nous avons réalisé une mission d'audit de performance portant sur le processus budgétaire de la Ville. Nous avons réalisé cette mission conformément à la norme canadienne de missions de certification (NCCM) 3001, du *Manuel de CPA Canada – Certification*.

Cet audit avait pour objectif de s'assurer que le processus supportant la confection du budget de fonctionnement de la Ville est efficace et rigoureux.

La responsabilité du vérificateur général de la Ville consiste à fournir une conclusion sur les objectifs de l'audit. Pour ce faire, nous avons recueilli les éléments probants suffisants et appropriés pour fonder notre conclusion et pour obtenir un niveau d'assurance raisonnable. Notre évaluation est basée sur les critères que nous avons jugés valables dans les circonstances. Ces derniers sont exposés à l'annexe 5.1.

Le vérificateur général de la Ville applique la *Norme canadienne de contrôle qualité* (NCCQ) 1 du *Manuel de CPA Canada* et, en conséquence, maintient un système de contrôle qualité exhaustif qui comprend des politiques et des procédures documentées en ce qui concerne la conformité aux règles de déontologie, aux normes professionnelles et aux exigences légales et réglementaires applicables. De plus, il se conforme aux règles sur l'indépendance et aux autres règles de déontologie du *Code de déontologie des comptables professionnels agréés*,

lesquelles reposent sur les principes fondamentaux d'intégrité, de compétence professionnelle et de diligence, de confidentialité et de conduite professionnelle.

Nos travaux d'audit ont porté sur le processus de confection du budget de fonctionnement de l'année 2021. Pour certains aspects, des données, des renseignements ou des documents antérieurs ou postérieurs ont également été considérés pour compléter notre analyse et nous permettre d'obtenir un portrait complet du processus. Ils ont principalement été réalisés entre les mois de juillet 2019 et mars 2021. Nous avons également tenu compte d'informations qui nous ont été transmises jusqu'en mai 2021.

Ces travaux ont principalement été réalisés auprès des unités d'affaires suivantes :

- Direction générale;
- Service des finances;
- Direction du budget et de la planification financière et fiscale;
- Direction du conseil et du soutien financier.
- Service de concertation des arrondissements;
- Service de l'eau;
- Service de Police de la Ville de Montréal;
- Arrondissement de Mercier–Hochelaga–Maisonneuve;
- Arrondissement de Saint-Laurent;
- Arrondissement de Ville-Marie.

À la fin de nos travaux, un projet de rapport d'audit a été présenté, aux fins de discussions, aux gestionnaires concernés au sein de chacune des unités d'affaires auditées. Par la suite, le rapport final a été transmis à la direction de chacune des unités d'affaires concernées pour l'obtention d'un plan d'action et d'un échéancier pour la mise en œuvre des recommandations les concernant, ainsi qu'à la Direction générale. Une copie du rapport final a également été transmise, à titre informatif, aux directeurs des arrondissements non directement visés par nos travaux d'audit, afin qu'ils puissent mettre en œuvre les recommandations lorsque la situation le justifie.

3. Résultats de l'audit

Il est à noter que les résultats sont présentés selon les grandes étapes du processus budgétaire (voir figure 5).

3.1. Détermination des orientations et confection des enveloppes budgétaires

3.1.1. Détermination des orientations et élaboration du cadre financier préliminaire

Dès la première semaine de janvier, la Direction du budget débute la confection du budget de la prochaine année. Elle prépare alors le cadre financier préliminaire qui est défini dans la documentation du SF de la façon suivante :

« Le cadre financier préliminaire est un outil de gestion financière qui vise à donner, dès la fin du processus budgétaire et tout au long du prochain processus de confection budgétaire, un aperçu de la nature des défis budgétaires que devra faire face l'Administration au cours des cinq prochaines années.

Il s'agit d'un travail évolutif, qui s'ajustera au fur et à mesure que de nouvelles informations s'ajouteront et des stratégies d'équilibre qui seront retenues par l'Administration, et ce, tant au niveau du volet des dépenses que celui des revenus.

En plus de lister les principaux éléments de variation des dépenses et des revenus, il sert également de document de base pour la confection des enveloppes budgétaires des unités, tout en permettant de suivre l'atteinte de l'équilibre budgétaire. Le cadre financier est également la pierre angulaire qui guide et enregistre les principaux impacts financiers des orientations prises à court et moyen terme par l'Administration³ ».

De janvier à mai, les variations relatives aux prévisions de revenus et de dépenses anticipées pour les cinq prochaines années sont recueillies et répertoriées au cadre financier préliminaire.

Les éléments qui auront un impact sur les dépenses des prochains exercices sont également recensés à partir du RDD du CE, du CM et du CG, dans un fichier Excel.

³ Cadre financier préliminaire 2021-2025. Direction du budget et de la planification financière et fiscale.

La version préliminaire du cadre financier s'appuie sur certaines hypothèses. Dans un premier temps, les revenus supplémentaires possibles sont évalués. Pour se faire, une projection de la croissance de l'assiette fiscale est effectuée et une augmentation correspondant au taux d'inflation projeté y est appliquée afin de déterminer les revenus additionnels de taxes potentiels. Les autres sources de revenus (p. ex. amendes et pénalités) sont également indexées au taux d'inflation prévu.

Pour ce qui est des dépenses, une évaluation de la croissance de celles-ci liée à la rémunération et au service de dette est effectuée. L'impact de l'indexation des autres dépenses prévues au budget de l'année précédente est également estimé. Ensuite, l'impact monétaire des décisions prises durant l'année par les élus sur le prochain budget ainsi que celui des nouveaux événements et projets sur les dépenses de l'année à venir sont calculés.

L'élaboration du cadre financier se fait en cumulant les écarts estimés de revenus et de dépenses par rapport au budget de l'année précédente. Le résultat obtenu, s'il est positif, représente la marge de manœuvre potentielle et, s'il est négatif, représente le manque à gagner prévu qu'il faut résorber.

Les écarts estimés de revenus et de dépenses sont présentés au cadre financier préliminaire selon les grandes catégories présentées au tableau suivant.

TABLEAU 1

Modèle de présentation du cadre financier préliminaire

Principales variations des dépenses et des revenus	Projections	
	Dépenses	Revenus
• Fiscalité locale:		xx
– Croissance de l’assiette fiscale;		
– Hausse des taxes.		
• Autres:		xx
– Hausse ou baisse des quotes-parts;		
– Hausse ou baisse des provisions.		
• Autres ajustements. ⁴		xx
 		
• Croissance de la rémunération et des cotisations de l’employeur (y compris la hausse des coûts des régimes de retraite).	xx	
• Croissance des autres dépenses (autre que les arrondissements).	xx	
• Croissance des transferts aux arrondissements.	xx	
• Hausse de la contribution au transport en commun.	xx	
• Autres ajustements du cadre financier:	xx	
– Priorités de l’administration;		
– Orientations stratégiques (incluant les scénarios pour le service de la dette).		
• Autres ajustements spécifiques. ⁵	xx	
Déséquilibre en date du xx		xx

Source: Informations compilées par le Bureau du vérificateur général à l’aide des cadres financiers préparés par la Direction du budget.

Comme illustré au tableau précédent, seuls les écarts de revenus et de dépenses sont présentés par grande catégorie, ce qui diffère de la présentation au budget. Lorsqu’un revenu ou une dépense ne fait l’objet d’aucune variation, il n’apparaît pas dans le cadre financier puisque seuls les écarts y sont indiqués. Cette présentation ne permet pas d’avoir une vue du budget dans son ensemble. Or, c’est sur cette base que les instances prennent leurs décisions.

⁴ Parmi ces ajustements, on retrouve notamment des affectations d’excédents accumulés et des baisses de revenus anticipées (p. ex. en raison de la COVID-19).

⁵ Il s’agit notamment de dépenses importantes liées à des travaux, des contrats ou des programmes.

La version préliminaire du cadre financier est produite à la suite de l'intégration de toutes les informations recueillies. Règle générale, la première version du cadre financier présente un déséquilibre financier pour chacune des cinq années à venir puisque les besoins excèdent toujours les ressources financières qui sont limitées. Une analyse des différentes pistes de solution possibles pour réduire le déséquilibre est alors effectuée. Plusieurs scénarios sont élaborés et étudiés par le comité de budget administratif afin de présenter un cadre financier en équilibre et les grandes orientations budgétaires y sont discutées.

C'est habituellement en mai que la première version du cadre financier préliminaire est présentée au comité de budget politique⁶. Cette première rencontre vise à informer ce comité de l'état de la situation, de recueillir les demandes des élus et d'étudier les différents scénarios d'augmentation des revenus et de dépenses, ou de contraintes et coupures de dépenses.

Faisant suite à cette première rencontre, la mise à jour du cadre financier préliminaire se poursuit au fur et à mesure que les décisions sont prises et que de nouvelles informations sont connues. Bien que l'on effectue les mises à jour des cinq années du cadre, les stratégies et les décisions sont prises presque exclusivement en fonction du budget en cours de préparation. Pour les années subséquentes, on y indique toutefois l'impact de l'indexation de ces décisions ou des nouvelles informations obtenues selon les taux prévus.

Les rencontres du comité de budget administratif et du comité de budget politique peuvent avoir lieu jusqu'à ce que le comité de budget politique donne son aval sur les orientations budgétaires, les directives et les contraintes à imposer qui guideront la préparation du prochain budget. Les orientations et les instructions budgétaires sont alors finalisées pour la confection du budget.

Avant de procéder à l'envoi des enveloppes budgétaires aux unités d'affaires, un document sommaire exposant les orientations retenues et les directives et les contraintes budgétaires est présenté à huis clos au CE. Il contient, notamment, les orientations retenues pour les services et les arrondissements, la croissance annuelle sous forme d'écart des charges fiscales par rapport à la croissance annuelle des dépenses et d'autres ajustements considérés au cadre financier préliminaire. Il expose également le déséquilibre financier qui en découle ainsi que différentes stratégies proposées pour le résorber.

Un mécanisme formel a donc été mis en place à la Ville afin que les instances puissent prendre les décisions stratégiques, déterminer les orientations budgétaires et respecter la *Politique de l'équilibre budgétaire*. En effet, un cadre financier est élaboré afin de présenter des projections financières et des comités ont été institués pour étudier différents scénarios pour atteindre l'équilibre budgétaire. Cependant, alors qu'auparavant les écarts de revenus, de dépenses et du déséquilibre du budget étaient présentés sur cinq ans, depuis le budget 2019, seule l'année en cours est présentée au CE.

⁶ Voir l'annexe 5.3.

Le cadre financier se concentre donc uniquement sur le budget de la prochaine année. Pourtant, selon la définition du cadre financier, ce dernier vise à fournir un aperçu de la nature des défis budgétaires auxquels devra faire face l'Administration municipale au cours des cinq prochaines années. Or, les décisions ou les changements apportés au cadre financier, après le dépôt des orientations budgétaires, ne font pas l'objet de projections sur cinq ans.

Le cadre financier quinquennal sert à prendre des décisions en les situant dans une perspective plus large que l'année en cours. Autrement dit, la Ville doit se demander si les décisions sur le budget de la première année du plan sont compatibles avec l'évolution prévisible des années ultérieures. Le fait de se concentrer uniquement sur les stratégies et les décisions du budget en cours de préparation peut rendre difficile la prise en compte des conséquences de celles-ci sur les suivantes. Si on se contente d'ajouter un facteur d'indexation au budget de la première année, on présume que tout est sous contrôle et le restera, évitant ainsi de montrer la situation véritable et les incertitudes de l'avenir.

Comme illustré au tableau suivant et au graphique 1, la Ville connaît une croissance de ses dépenses supérieure à celle de ses revenus, ce qui est en soi déjà inquiétant pour l'avenir, mais n'est pas reflété dans le cadre financier. En effet, le cadre financier préliminaire présente annuellement un déséquilibre budgétaire important, ce qui démontre un déficit structurel.

TABLEAU 2

Présentation des déséquilibres financiers préliminaires depuis 2015

	Cadre financier préliminaire						
	Déséquilibre budgétaire avant les stratégies d'équilibre (en millions de dollars)						
	2015	2016	2017	2018	2019	2020	2021
Augmentation des dépenses	250,4	182,8	263,6	325,1	285,1	358,5	566,5
Augmentation des revenus	101,0	89,1	119,9	129,6	70,7	176,4	74,1
Déséquilibre préliminaire	149,4	93,7	143,7	195,5	214,4	182,1	492,4 ⁷

Source: Documents de présentation à huis clos au CE en juin/juillet de chaque année.

⁷ En 2021, l'augmentation importante du déséquilibre financier préliminaire s'explique notamment par une augmentation de la hausse anticipée de 155,4M\$ de la contribution à l'ARTM due au contexte de pandémie.

GRAPHIQUE 1

Illustration des déséquilibres financiers préliminaires depuis 2015



Source: Les données du tableau 2.

Pourtant, en avril 2014, l'Administration municipale déposait et publiait un ambitieux plan de redressement des dépenses concernant les budgets des années à venir. Une analyse des prévisions de croissance des revenus et des dépenses pour les années 2015 à 2020 révélait que, pour mettre en œuvre les priorités de l'Administration municipale tout en limitant les augmentations de taxes à l'inflation, la Ville devrait faire face à un manque à gagner annuel de l'ordre de 130 millions de dollars (M\$) à 160 M\$.

Afin d'équilibrer le budget et de résorber cet écart structurel entre les revenus et les dépenses, l'Administration municipale adoptait un plan prévoyant des compressions annuelles de l'ordre de 3,6 % à 4,4 % applicables aux budgets de base des services, des arrondissements et des frais généraux. Afin d'y parvenir, on prévoyait des réductions annuelles récurrentes de 1% de l'enveloppe budgétaire des unités d'affaires et des frais généraux après l'augmentation des salaires et des échelons et l'indexation des contrats. Une diminution de la masse salariale de 450 M\$ sur 5 ans était prévue dont 240 M\$ proviendraient du remplacement d'un poste sur deux des départs à la retraite.

Or, malgré la kyrielle des mesures et des contraintes imposées, nous constatons que le déséquilibre budgétaire structurel augmente et ne s'est pas résorbé, exigeant encore l'imposition d'autres mesures et contraintes annuellement. Le cadre financier préliminaire ne semble donc servir qu'à établir les contraintes de la prochaine année. Il n'est pas suivi d'un cadre financier quinquennal équilibré dans lequel apparaîtraient les risques et les défis des projections actuelles. Le cadre financier est un instrument incontournable de la gestion budgétaire, une sorte de système d'alerte avancé qui met l'accent sur les tendances favorables et défavorables pour les cinq prochaines années. Afin d'utiliser cet outil à bon escient, un tel cadre financier devrait être préparé et publié par la Ville dans le cadre du budget annuel.

Les données précédentes montrent bien la difficulté grandissante qui se poursuivra dans les prochaines années. On n'a qu'à penser que l'équilibre pour 2021 n'a été atteint en bonne partie qu'avec une subvention importante du gouvernement

du Québec et une diminution adéquate du paiement au comptant d'immobilisations. En soi, ces éléments, malgré la pandémie, sont porteurs de signaux défavorables pour l'avenir, mais leurs conséquences ne sont pas évoquées publiquement.

Par ailleurs, la *Politique de l'équilibre budgétaire*, émise en 2018 par le SF afin d'encadrer le processus d'élaboration du cadre financier, indique que pour faire des prévisions justes, il faut bien connaître le comportement des coûts et que des analyses de coûts par activité doivent donc être effectuées. La méthode actuelle pour attribuer les enveloppes budgétaires aux unités d'affaires ne tient pas compte des analyses de coûts par activité. Elle repose plutôt sur la gestion des écarts des revenus et des dépenses par rapport au budget adopté l'année précédente. Cela a pour effet que les stratégies budgétaires privilégiées par l'Administration municipale et les orientations qui en découlent sont concentrées sur l'atteinte de l'équilibre budgétaire plutôt que sur une allocation optimale des budgets afin de rendre les services attendus et de favoriser l'atteinte des objectifs poursuivis.

De plus, les décisions et les orientations déterminées lors de la confection des budgets précédents sont reconduites sans qu'elles soient actualisées ou analysées pour s'assurer de leur pertinence. Par exemple, des économies anticipées concernant les postes vacants, évaluées en 2017, sont toujours considérées sans être réévaluées.

Nous avons aussi constaté que contrairement à la *Politique de l'équilibre budgétaire*, les décisions ne sont pas toujours documentées ou soutenues par les analyses disponibles, par exemple le taux d'indexation de la tarification, et qu'aucun compte-rendu approuvé n'est préparé pour consigner les discussions et les décisions prises par les comités du budget à cette étape du processus.

Aussi, selon cette *Politique de l'équilibre budgétaire*, la préparation du budget doit permettre de s'arrimer aux orientations stratégiques, puisque les prévisions doivent respecter les priorités de l'Administration municipale. Or, pour les années couvertes par notre audit, nous avons observé que la Ville n'avait pas encore réalisé un processus de planification stratégique sur lequel pouvait s'appuyer la confection du budget. Nous avons de plus constaté que le processus budgétaire 2021 n'était pas inscrit dans une démarche globale de planification. Chacun des services possède ses objectifs et présente ses demandes budgétaires en lien avec ses propres activités et orientations. Certains d'entre eux ont même réalisé leur propre planification stratégique, chaque service travaillant de façon indépendante.

Le premier plan stratégique de la Ville, *Montréal 2030* a été adopté par le CE le 9 décembre 2020 et déposé au CM du 14 décembre 2020. Cela représente à notre point de vue une avancée importante dans la gouvernance de la Ville. Cependant, bien que la démarche soit à ses tout débuts, il n'existe pas, à l'heure actuelle, de plan pour arrimer le processus budgétaire à la planification stratégique.

3.1.1.A. Recommandation

Nous recommandons à la Direction générale de se doter d'un cadre financier quinquennal équilibré qui permette de voir au-delà du budget de fonctionnement annuel, d'y présenter les principaux risques et défis à venir et de le rendre public afin que les élus et les citoyens puissent mieux apprécier la signification du budget présenté.

3.1.1.B. Recommandation

Nous recommandons à la Direction générale de poursuivre ses efforts afin de mettre en œuvre le plan stratégique *Montréal 2030* et d'élaborer des plans opérationnels et financiers qui pourront s'intégrer au processus budgétaire et, ainsi, favoriser l'atteinte des objectifs poursuivis.

3.1.1.C. Recommandation

Nous recommandons à la Direction générale de consigner les rencontres du comité de budget administratif et du comité de budget politique dans des comptes-rendus approuvés et de documenter les décisions et les orientations approuvées par ceux-ci, afin de respecter les pratiques préconisées dans la *Politique de l'équilibre budgétaire* au niveau de la documentation et d'éclairer la prise de décisions.

3.1.1.D. Recommandation

Nous recommandons au Service des finances d'évaluer les mesures qui sont reconduites d'une année à l'autre au cadre financier et de les appuyer par des analyses récentes, documentées et basées sur les résultats historiques et les perspectives économiques, afin de respecter les pratiques préconisées dans la *Politique de l'équilibre budgétaire* au niveau de la documentation et d'éclairer la prise de décisions.

3.1.1.E. Recommandation

Nous recommandons au Service des finances de se doter d'un mécanisme permettant de faire le suivi des modifications apportées au cadre financier et de le réviser.

3.1.2. Établissement des prévisions de revenus et de dépenses

Afin que le budget soit pertinent comme outil de gestion et en vue d'en permettre une reddition de comptes adéquate, la préparation de ce dernier requiert l'utilisation d'estimations et d'hypothèses les plus précises possibles.

Ce processus est complexe et il demeure inévitable que des sous-estimations et surestimations occasionnelles mineures surviennent. Cependant, leur ampleur et leur systématisation pourraient indiquer une certaine défaillance dans le processus de préparation du budget et fausser la compréhension de la situation véritable de la Ville.

Bien que, les résultats réels de la Ville se soldent par un excédent marginal par rapport au 6 G\$ du budget initial, il est essentiel d'analyser chacune des rubriques de revenus et de dépenses afin de déterminer si les données et les méthodes utilisées pour établir les prévisions sont pertinentes et bien documentées.

Dans les prochaines sections, nous faisons état de notre analyse des processus budgétaires des revenus et des dépenses sélectionnés, soit selon l'importance des montants ou leur complexité.

Comme précisé à la section 1 du présent rapport, la responsabilité de ces processus est répartie entre plusieurs unités d'affaires. En effet, bien qu'une grande partie relève du SF, plusieurs unités d'affaires ont un rôle important à jouer dans l'établissement des prévisions, et ce, tant au niveau des revenus que des dépenses.

3.1.2.1. Volet revenus

Fiscalité (revenus de taxes)

Les revenus provenant de l'imposition des taxes et des paiements tenant lieu de taxes représentent 4 G\$ des revenus totaux budgétés en 2021 de 6,17 G\$ soit 64,7%. La justesse des prévisions de ces éléments est essentielle puisqu'un écart de plus ou moins 1% dans les prévisions représente une volatilité d'environ 40 M\$. Le tableau suivant expose les différents types de taxes et ce qu'elles financent.

TABEAU 3

Types de taxes et leur financement

Taxes	Que financent les revenus?
1) Taxe foncière générale	Ensemble des services offerts par la Ville de Montréal
2) Taxes à de fins spécifiques	
- Taxe relative à l'eau	Services d'alimentation en eau potable et de l'assainissement des eaux usées
- Taxe relative à l'Autorité régionale de transport métropolitain	Contribution versée à l'Autorité régionale de transport métropolitain pour les services de transports collectifs.
- Taxe relative à la voirie	Infrastructures de la voirie
- Tarification pour l'eau	Gestion de l'eau
- Taxe relative aux services	Financement général de l'ensemble des services offerts par chaque arrondissement
- Taxes relatives aux investissements	Dépenses d'investissement de chaque arrondissement

Source: Document *Montréal – Budget 2021 – PDI 2021-2030* (35/446 du PDF), de la Ville.

Quant aux paiements tenant lieu de taxes, ils proviennent principalement d'un montant compensatoire de taxes sur les immeubles détenus par les gouvernements du Canada et du Québec ou des sociétés leur appartenant, ainsi que les immeubles des réseaux de la santé et de l'éducation.

En début d'exercice, la Direction du budget calcule deux des principaux ajustements liés aux taxes afin de les intégrer dans le cadre financier préliminaire soit l'indexation des charges fiscales selon l'inflation projetée et les revenus estimés provenant de la croissance immobilière.

En cours de processus plusieurs variables doivent être estimées afin de raffiner les prévisions du cadre financier dont, entre autres, la croissance immobilière et les prévisions de perte de valeurs liées aux contestations d'évaluation. Tous les modèles de prévisions sont alors préparés sur des fichiers Excel. Des scénarios sont également préparés à la demande des instances municipales afin d'évaluer l'impact des variations des charges fiscales, incluant les tarifs.

À partir du mois de septembre, lorsque les orientations budgétaires sont de plus en plus précises, les modèles finaux sont mis à jour à l'aide des valeurs foncières contenues dans le rôle d'évaluation (environ 321G\$ au 11 septembre 2020 pour environ 418 000 unités).

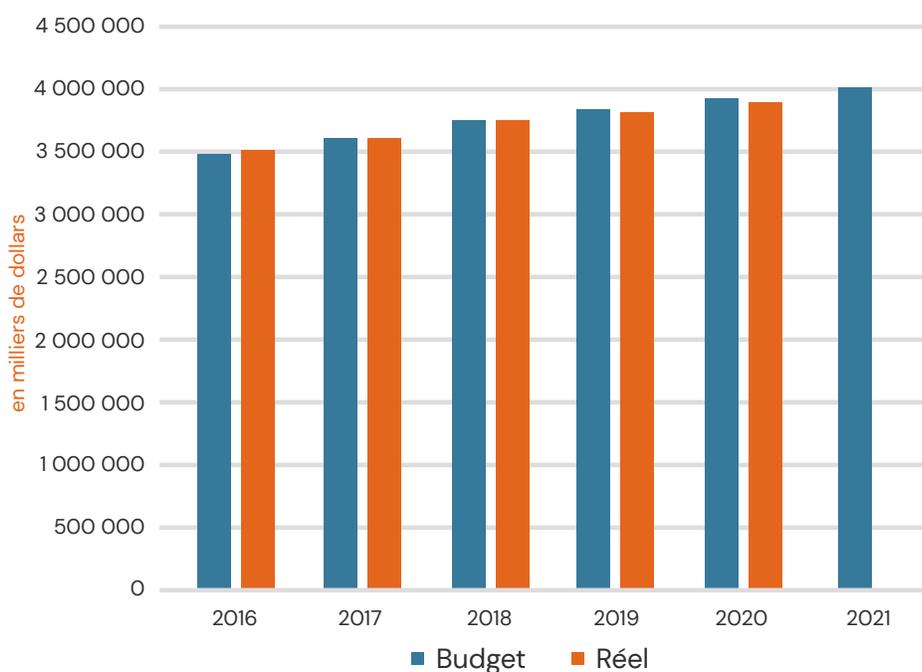
Une première étape menant à la détermination des prévisions est l'établissement des taux de taxes et des tarifs qui seront appliqués pour l'exercice en cours de planification, en fonction des orientations retenues quant à la variation des charges fiscales pour l'exercice. Par la suite, une deuxième étape consiste à prévoir les revenus de chaque catégorie de taxes, de tarifs et de compensations et d'assurer l'atteinte de la cible budgétaire.

La majorité des processus budgétaires relatifs aux revenus de taxes et aux paiements tenant lieu de taxes sont documentés depuis plusieurs années. Au cours des deux dernières années, des contrôles ont été mis en place afin de minimiser les risques d'erreurs notamment la validation des travaux par une tierce personne appuyée par des traces de contrôles.

Les prévisions de revenus de taxes se sont d'ailleurs avérées assez justes au cours des dernières années. Le graphique suivant présente les prévisions établies et les revenus de taxes réellement perçus au cours des cinq dernières années.

GRAPHIQUE 2

Prévisions et résultats historiques – Taxes et paiements tenant lieu de taxes



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

Revenus de quotes-parts

Comme il a été mentionné précédemment, les pouvoirs d'administrer la Ville sont partagés en compétences d'agglomération et en compétences locales. Ainsi, la Ville gère certains équipements communs et fournit des services à l'ensemble des citoyens de l'île de Montréal, soit ceux de la Ville et des 15 villes reconstituées.

Les revenus de quotes-parts proviennent des villes reconstituées pour le financement des dépenses nettes de l'agglomération établies en vertu de la *Loi sur certaines compétences municipales dans certaines agglomérations* (RLRQ, c.E-20.001). Ces dépenses doivent être réparties entre les municipalités liées en proportion de leur potentiel fiscal respectif ou notamment en fonction d'autres critères déterminés par un règlement du CG.

Les quotes-parts se divisent en 2 grandes catégories: les quotes-parts générales et les quotes-parts spécifiques visant le financement d'activités précises. Pour le budget 2021, le montant des dépenses nettes budgétées liées aux compétences de l'agglomération s'élevait à 2,5 G\$⁸ dont 437,6 M\$ sont refacturés aux 15 villes reconstituées et présentées à titre de revenus de quotes-parts.

En tout début de processus, pour la préparation du cadre financier préliminaire, seule une indexation de la majorité des quotes-parts à l'inflation est effectuée. Les prévisions de revenus de quotes-parts ne peuvent être établies qu'en fin de processus, soit lorsque les dépenses budgétées liées aux compétences de l'agglomération sont connues ainsi que les montants relatifs au financement de la dette à long terme.

Lors de notre analyse du processus d'établissement des prévisions de revenus de quotes-parts, nous avons constaté que des améliorations devaient y être apportées. En effet, les contrôles existants ne sont pas documentés afin de démontrer qu'ils ont été exécutés. Dans ce contexte, des erreurs dans les prévisions pourraient survenir et ne pas être détectées.

⁸ Document *Montréal – Budget 2021 – PDI 2021-2030*, page 205.

Revenus de transferts

Les revenus de transferts proviennent des gouvernements supérieurs. Il s'agit de subventions remises suite à la signature d'une entente ou à la publication d'un décret, et destinées à des fins particulières. Un montant de 411,7 M\$ est budgété pour l'année 2021. Ce montant couvre entre autres, l'entente de partenariat 2020–2024: *Pour des municipalités et des régions encore plus fortes* signée avec le gouvernement du Québec (14,2 M\$), les revenus de transferts relatifs aux remboursements de la dette à long terme faisant suite à des travaux d'infrastructures (21,4 M\$), l'entente relative à Réflexe Montréal (127,1 M\$), accès logis (61,3 M\$), la Communauté métropolitaine de Montréal (CMM) (61,8 M\$) et la gestion des matières résiduelles (43,3 M\$).

Les revenus de transferts inscrits au cadre financier sont établis à partir du budget adopté l'année précédente.

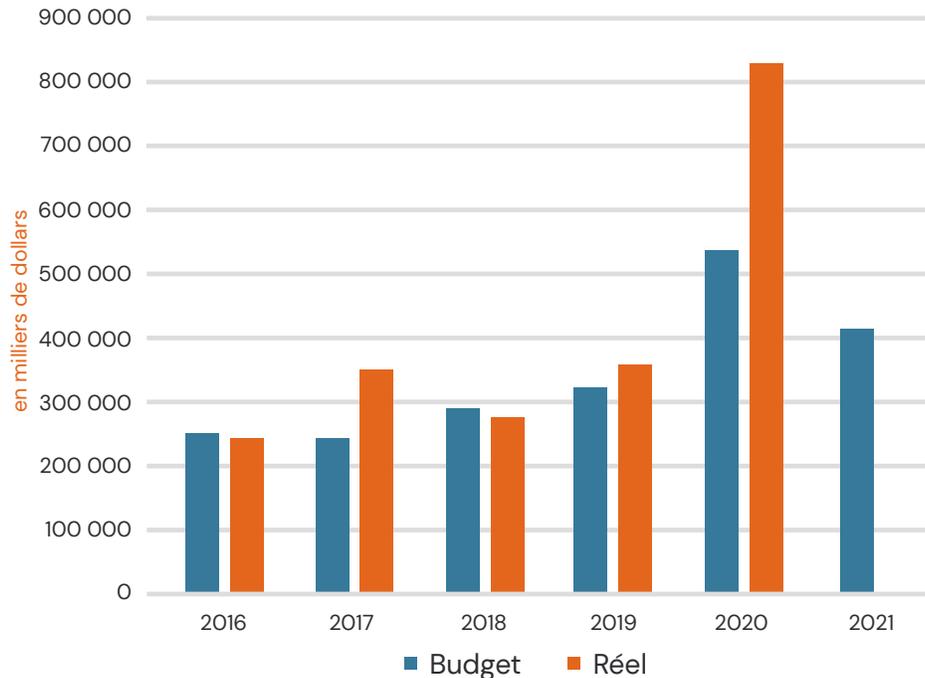
Étant donné que la majorité des revenus de transferts résulte de protocoles d'ententes entre la Ville et les gouvernements supérieurs, ils figurent au RDD qui devient la principale source d'informations privilégiées. Les revenus de transferts budgétés incluent aussi certaines ententes importantes imminentes qui ont été discutées aux comités du budget. En considérant que plusieurs revenus de transferts et les dépenses afférentes sont sous la responsabilité des différents services centraux, ces informations sont incluses dans les enveloppes budgétaires de ceux-ci permettant ainsi d'ajuster les prévisions de revenus de transferts lors de la confection du budget.

Nos travaux ont démontré que certaines améliorations pourraient être apportées à ce processus, notamment au chapitre des validations à effectuer pour s'assurer de l'exhaustivité des transferts pris en compte et pour veiller à ce que les prévisions soient conformes à la méthode comptable déterminée pour l'enregistrement de ces revenus. Cette méthode étant complexe, elle requiert une attention particulière lors de la confection du budget afin de s'assurer que les prévisions soient réalistes.

Le graphique suivant démontre que l'écart entre les prévisions de revenus de transferts et ceux reçus n'est pas significatif, mis à part en 2020, puisque la Ville a reçu un transfert lié à la pandémie de 263,5 M\$ qui n'était pas prévisible lors de la confection du budget. Ce montant a été imputé entièrement à titre de revenus de transfert à l'exercice 2020 conformément aux normes comptables. Une partie de l'excédent, soit 178,5 M\$ non dépensés en 2020, a été affectée à l'exercice 2021. Ce transfert n'étant pas récurrent, alors que des besoins spécifiques pourraient subsister dans le futur, il serait pertinent que la Ville évalue dès maintenant des sources de financement potentielles pour les combler.

GRAPHIQUE 3

Prévisions et résultats historiques – Revenus de transferts



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

Amendes et pénalités

Les prévisions relatives aux amendes et pénalités sont constituées majoritairement des constats d'infraction en matière de circulation et de stationnement et elles sont présentées dans le budget du Service des affaires juridiques (SAJ). Lors de la confection du cadre financier préliminaire, ces revenus correspondent aux revenus budgétés de l'an dernier indexés à l'inflation. La prévision de ces revenus est alors raffinée par le SAJ lors de la confection de son budget en collaboration avec le Service de Police de la Ville de Montréal (SVPM) et l'Agence de mobilité durable.

Comme le démontre le graphique suivant, les prévisions de revenus pour les amendes et pénalités sont surévaluées d'année en année. Le SAJ produit une analyse faisant état de la nécessité de réduire ces prévisions afin de tenir compte des revenus réellement perçus et ainsi refléter un montant budgété plus juste.

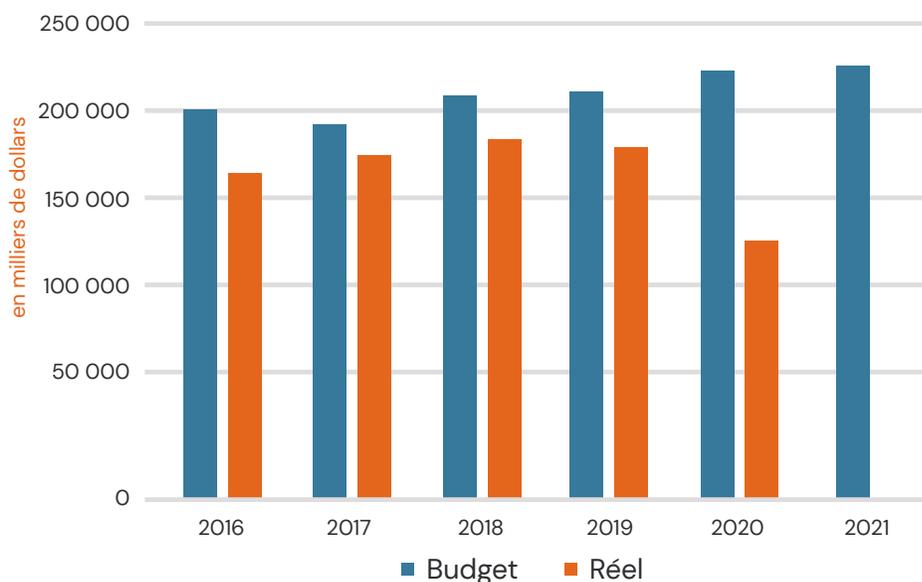
Le comité de budget administratif et le comité de budget politique ont toutefois décidé de les maintenir à la suite d'une revue des ressources et des activités afférentes qui seront mises en place en 2021 et qui devraient augmenter de façon substantielle les revenus. Cependant, bien que les hypothèses quant au nombre de ressources et à l'intensification des activités soient documentées, cette décision n'a pas été consignée formellement. Le Service en a été informé à la fin du processus seulement, sans être impliqué dans les évaluations et les discussions, ce qui ne favorise pas l'imputabilité budgétaire. Par ailleurs, selon les données financières

disponibles au 31 mars 2021, la cible budgétaire risque de ne pas être atteinte comme ce fut le cas au cours des dernières années.

Notons qu'une surestimation systématique de revenus peut donner une fausse assurance et créer une marge de manœuvre fictive sur laquelle on ne pourra compter lorsqu'on aura besoin d'un excédent.

GRAPHIQUE 4

Prévisions et résultats historiques – Amendes et pénalités



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

Imposition de droits

L'imposition de droits regroupe les revenus sur les mutations immobilières ainsi que les revenus de licences et de permis.

L'hypothèse utilisée pour déterminer les prévisions relatives aux droits de mutation est établie en deux volets soit en considérant d'une part la variation des valeurs de l'immobilier et dans un deuxième temps la variation du nombre de transactions. À cet égard, les paramètres analysés sont principalement les transactions récentes, les résultats des deux années précédentes ainsi que la conjoncture économique. Dans le cadre de ces revenus, il est préconisé par la Ville d'établir un budget conservateur sous prétexte que le marché actuel ne suit pas les cycles habituels de l'immobilier.

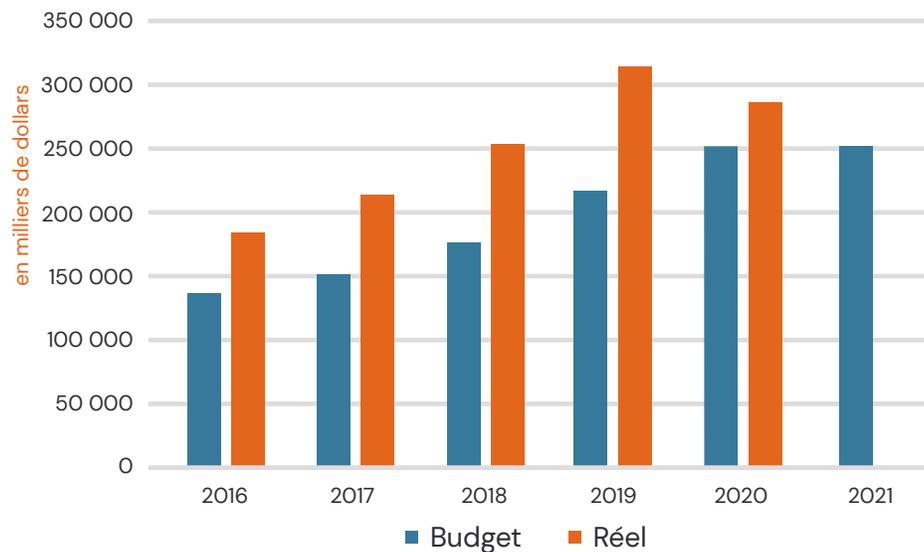
En cours d'année, une veille est mise en place afin de faire le suivi des évolutions budgétaires trimestrielles et d'évaluer l'atteinte de la cible budgétaire. Pour le budget 2021, des réflexions plus poussées ont été entreprises et ont mené à la décision de maintenir le budget de l'année précédente considérant le contexte

de la pandémie. Nous avons constaté que le processus, les hypothèses formulées ainsi que la décision finale n'ont pas été documentés formellement.

Le graphique suivant démontre que les prévisions relatives aux droits sur les mutations immobilières sont sous-évaluées en moyenne de 33,3 %, soit 61M\$ par année entre 2016 et 2020.

GRAPHIQUE 5

Prévisions et résultats historiques – Droits sur les mutations immobilières



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

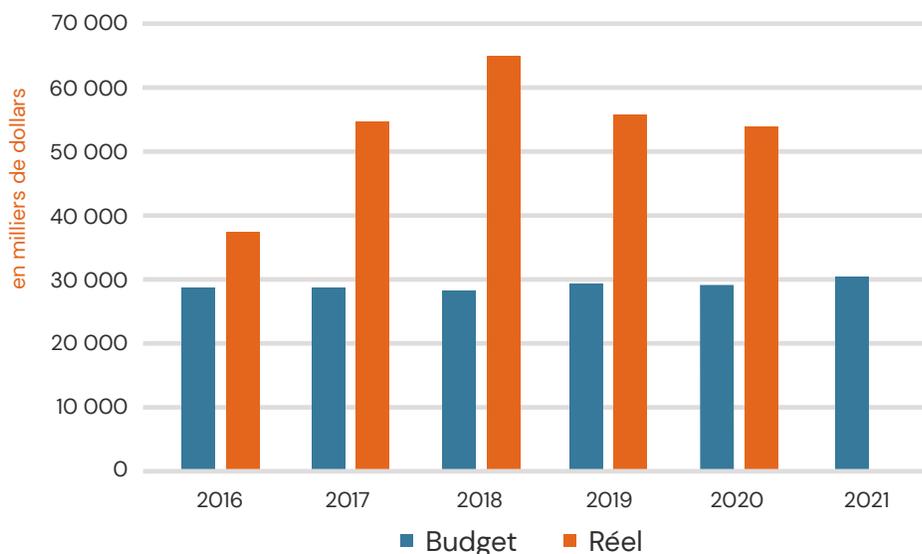
Cette sous-estimation étant systématique et de bonne ampleur, la méthode d'établissement de ces prévisions doit être revue afin qu'elle ne relève pas d'une prudence excessive et que les prévisions soient plus représentatives de la réalité.

En ce qui concerne les revenus provenant des licences et des permis de construction et de rénovation, les résultats réels démontrent également que leur prévision est sous-évaluée. Cette prévision est établie en grande partie sur la base d'un budget déterminé en 2014, lors de la réforme du financement des arrondissements (RFA), et qui n'a pas été revue depuis. Les revenus de permis, auparavant gérés par les arrondissements, sont maintenant centralisés à la Ville. La section 3.2.2. du présent rapport, portant sur la confection des budgets des arrondissements, précise les changements apportés et leurs conséquences sur le budget de fonctionnement.

Sur la base des résultats de 2016 à 2019, nous constatons une sous-évaluation moyenne de 24 M\$ par année ou 84 % du montant budgété. En 2020, la Ville a également encaissé 24 M\$ de plus que le montant budgété, et ce, malgré la pandémie, soit un écart de 81 %. Le graphique suivant démontre cette sous-évaluation très importante.

GRAPHIQUE 6

Prévisions et résultats historiques – Revenus de permis



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

3.1.2.2. Volet dépenses

Rémunération et cotisations de l'employeur

En 2021, la Ville a budgété un montant de 2,5 G\$ à titre de rémunération globale, ce qui représente la dépense la plus importante de la Ville. Ce poste inclut les dépenses liées à la masse salariale des employés et des élus ainsi que les cotisations de l'employeur quant aux charges sociales, aux régimes de retraite, ainsi que les contributions aux différents régimes gouvernementaux.

La préparation du budget de rémunération relève de la Direction du budget. Ce processus est très complexe. Il nécessite l'utilisation de données multiples, de nombreux fichiers, de différentes bases de données et exige de nombreux contrôles pour assurer la justesse des prévisions.

Il s'étale sur une période de cinq mois allant de janvier à mai et comporte plusieurs étapes, notamment l'indexation de la rémunération selon les taux prévus aux conventions collectives, des ajustements pour refléter les décisions administratives et une validation avec la structure des postes des différentes unités d'affaires.

Il s'agit d'un exercice laborieux étant donné le nombre de conventions collectives en vigueur et que certaines catégories d'emploi possèdent des particularités qui doivent être traitées spécifiquement dont notamment les libérations syndicales, les banques de maladie, les postes vacants et les postes budgétés sous forme de banques d'heures pour les cols bleus.

Il en est de même pour les taux des cotisations de l'employeur qui exigent des simulations de la moyenne d'augmentation des dernières années lorsque le taux n'est pas disponible. Ils proviennent de plusieurs sources: Bureau des régimes de retraite, SRH et les sites Internet des organismes gouvernementaux (p. ex. la Régie des rentes du Québec, le Régime d'assurance parentale et le Régime d'assurance-emploi).

Considérant la complexité et la manipulation de données, plusieurs rapports de validation (36 différents) sont utilisés au cours du processus afin de corroborer les différentes données obtenues. Le but est de s'assurer que toutes les données sur les structures, les postes, les salaires et les affectations soient le plus à jour possible avant de procéder au calcul des enveloppes budgétaires.

Ce n'est qu'en juin, qu'il est possible de procéder au calcul final de la rémunération et des cotisations de l'employeur pour chacune des unités d'affaires. Ce montant sert à la préparation des enveloppes budgétaires et les données de l'application utilisée pour établir les prévisions sont alors transférées dans l'application SBA manuellement, système dans lequel les unités d'affaires viendront inscrire leur budget lorsqu'il sera complété.

L'utilisation de plusieurs systèmes ou applications amène un enjeu supplémentaire au niveau de la structure des données requises pour établir les prévisions, laquelle peut différer d'un système à l'autre. En effet, un employé peut être imputé dans des postes budgétaires différents d'une application à l'autre. Cette situation rend les comparaisons entre les résultats réels et le budget hasardeuses lors des suivis budgétaires, alourdit le processus et augmente le risque d'erreur. Lors de nos travaux, nous avons constaté qu'il n'y a pas de conciliation de la rémunération finale budgétée dans l'application SBA par l'ensemble des unités d'affaires avec le registre de postes et il peut s'avérer difficile de le faire au prix d'un effort raisonnable.

Nous avons pu constater que certaines des hypothèses utilisées ne sont pas supportées par des pièces justificatives. C'est le cas pour établir le montant d'économie relative au non-remplacement des postes vacants. En 2017, à titre de stratégie pour réduire la masse salariale, les budgets de rémunération de chaque unité d'affaires avaient été réduits de 2,5% afin de refléter des économies liées aux postes vacants pour congés de maladie, départs ou retraites. Ce pourcentage n'a jamais été revu et ne concorde pas avec la réalité observée selon certaines unités d'affaires rencontrées lors de notre audit. En 2021, le montant de « l'économie » budgétée en diminution de la rémunération globale s'élève à près de 35 M\$. Nous avons constaté qu'aucune reddition de comptes n'est exigée et qu'aucune vérification n'est effectuée pour s'assurer que l'unité d'affaires a dans les faits, réalisé l'économie prévue.

Par ailleurs, la *Politique de gestion des dépenses* précise que la Ville doit élaborer ou mettre à jour à jour un plan de l'effectif et le soumettre à l'approbation du CE dans le cadre du processus budgétaire. Bien que cette pratique soit respectée et que le plan de l'effectif est présenté au document budgétaire, nous avons constaté que ce plan ne représente pas fidèlement le nombre d'années-personnes lié aux prévisions de rémunération pour les raisons énoncées ci-après.

Le calcul des années-personnes, selon la définition présentée au lexique du document budgétaire, est obtenu en divisant le nombre d'heures travaillées par le nombre d'heures normalement contenues dans une année de travail en fonction du groupe d'emplois. Or, nous avons constaté que le calcul des années-personnes présenté au budget n'inclut pas les heures supplémentaires qui s'élèvent à 84,3 M\$ (incluant les cotisations de l'employeur) au budget 2021. Cela pourrait correspondre à près de 530 années-personnes supplémentaires, soit plus de 2,4 % des années-personnes budgétées.

Nous avons également observé dans un rapport de validation des données que des années-personnes sont soustraites du tableau des effectifs présenté au document budgétaire sans que le budget de rémunération en soit diminué d'autant. Cette situation date depuis plusieurs années et n'est pas régularisée à ce jour.

Nous avons aussi constaté que les arrondissements audités financent des dépenses de rémunération à même leurs affectations de surplus. Par conséquent, le budget de la rémunération s'en trouve biaisé et ne correspond pas au nombre d'années-personnes réel.

De plus, il n'y a aucune conciliation entre les années-personnes présentées au document budgétaire, les années-personnes réellement payées et le plan de l'effectif autorisé. Un calcul du nombre d'années-personnes rémunérées devrait être effectué à titre comparatif pour évaluer la vraisemblance du nombre d'années-personnes initialement budgété.

Ces précédentes constatations nous amènent à conclure que les effectifs présentés au document budgétaire sont sous-évalués.

Finalement, nous avons constaté que la documentation relative au processus de préparation du budget de rémunération globale est bien amorcée au niveau de la description des étapes à réaliser. Toutefois, elle ne contient pas les étapes de validation et d'approbation essentielles à un suivi et à un contrôle. Nous avons aussi constaté l'absence de validation par un niveau supérieur ou une tierce personne, alors que le travail est effectué par une seule personne. L'ajout de ces étapes faciliterait également la compréhension du processus par d'autres membres de l'équipe du budget et une éventuelle relève.

Le tableau et le graphique suivants démontrent que globalement, les prévisions de dépenses de rémunération sont inférieures aux dépenses réelles et que l'écart budgétaire moyen des 5 dernières années est de 57 M\$ soit 2,5 %. Cet écart est dû notamment au temps supplémentaire qui est sous-budgétisé.

TABEAU 4

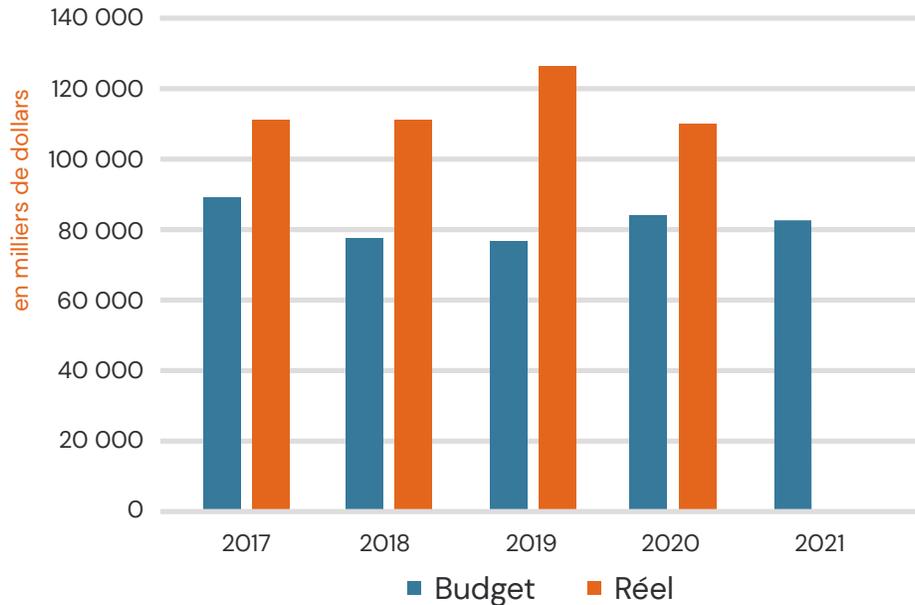
Écart de rémunération globale

Année	Budget (en milliers de dollars)	Réel (en milliers de dollars)	Écarts (en milliers de dollars)	Écarts
2016	2 350 816 \$	2 367 691 \$	(16 875) \$	-0,7 %
2017	2 299 293 \$	2 412 359 \$	(113 066) \$	-4,9 %
2018	2 330 561 \$	2 365 334 \$	(34 773) \$	-1,5 %
2019	2 295 297 \$	2 347 059 \$	(51 762) \$	-2,3 %
2020	2 378 749 \$	2 449 340 \$	(70 591) \$	-3,0 %
2021	2 522 481 \$			

Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

GRAPHIQUE 7

Prévisions et résultats historiques – Rémunération du temps supplémentaire



Source: Données compilées par le Bureau du vérificateur général à l'aide des redditions de comptes financières et des systèmes informatiques de la Ville.

Nous avons aussi observé certains écarts entre les différentes catégories d'emplois et les différentes unités d'affaires. Certains ont des écarts défavorables importants dus notamment au temps supplémentaire sous-budgétisé alors que d'autres ont des écarts favorables dus entre autres à la difficulté de pourvoir des postes vacants. Ces écarts ne sont pas apparents puisqu'ils s'annulent lorsqu'on les considère globalement. Cette situation peut cependant s'avérer risquée, puisque les écarts défavorables pourraient ne pas être compensés par les écarts favorables.

Service de la dette

Le calcul du budget du service de la dette implique un nombre élevé d'hypothèses, de données et l'intégration des prévisions concernant la réalisation des nombreux travaux et projets prévus au Plan décennal d'immobilisations 2021-2030. Ce processus est sous la responsabilité de la Direction du financement, placement et trésorerie du SF.

Aux états financiers de l'exercice terminé le 31 décembre 2019, la dette brute était de 9,9 G\$. Le montant du service de la dette brute prévu au budget de fonctionnement de 2021 s'élève à près de 1,1 G\$. Ce montant est composé de frais de financement de 423 M\$, du remboursement de la dette à long terme de 575 M\$ et d'un montant de près de 65 M\$ présenté dans ce poste budgétaire à titre d'affectation de remboursement du capital⁹. La portion du service de la dette corporative s'élève à 879 M\$ dans le budget 2021. La différence de 184,3 M\$ représente le service de la dette inclus aux budgets des unités d'affaires.

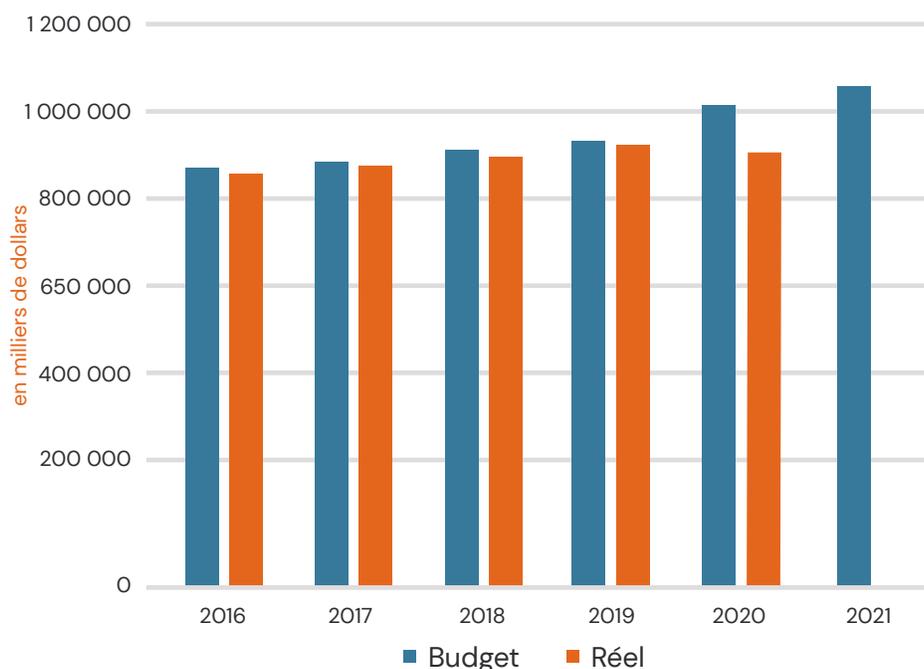
Nous avons constaté que, comme dans le cas des autres processus examinés, le budget du service de la dette est calculé en grande partie à l'aide de fichiers Excel, ce qui augmente le délai de production et le risque d'erreurs. De plus, il n'y a pas de révision ni d'approbation formelle des hypothèses utilisées. Par ailleurs, les contrôles ne sont pas documentés et il n'y a pas de trace de leur exécution.

Le graphique suivant présente le service de la dette budgété et réalisé depuis 2016. On remarque un écart en 2020 qui s'explique par un ralentissement dans la réalisation de certains travaux dû à la pandémie.

⁹ Cette affectation représente la contribution versée à la réserve financière constituée pour le remboursement accéléré de la dette (Document *Montréal – Budget 2021 – PDI 2021-2030*, tableau 43, page 147).

GRAPHIQUE 8

Prévisions et résultats historiques – service de la dette brute



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

Dépenses de contributions

En 2021, les dépenses de contributions représentent un montant de 1,1G\$ au budget de la Ville. Elles comprennent tous les budgets nécessaires au soutien financier accordé aux organismes, incluant celles effectuées auprès des organismes incluant dans le périmètre comptable, ainsi que la quote-part versée à l'Autorité régionale de transport métropolitain (ARTM) et à la CMM.

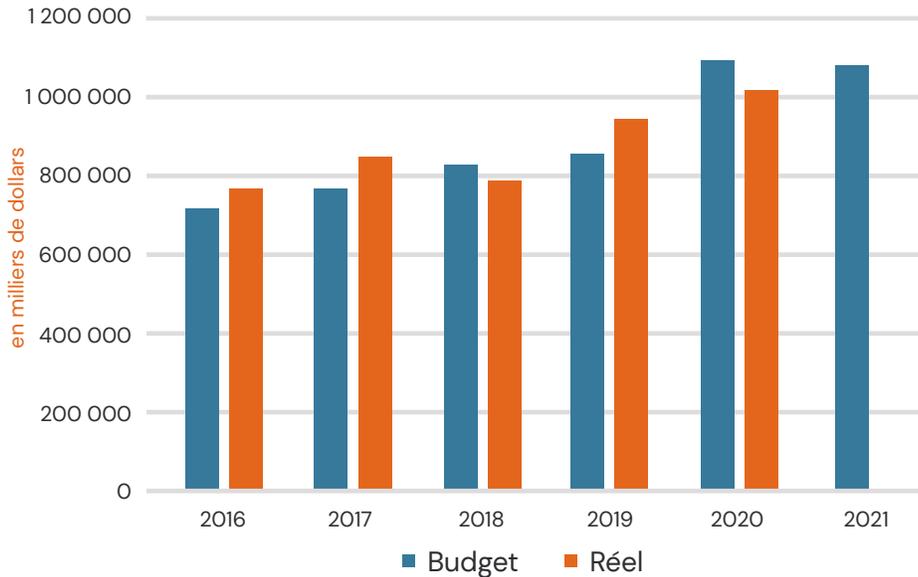
Les contributions prévues pour ces 2 organismes, y compris une provision pour la mise en place de mesures de tarification pour le transport collectif, totalisaient 676 M\$, soit 63 % des dépenses de contributions, comparativement à 549 M\$ soit 76 % en 2016. Étant déterminées par ces organismes, ces contributions ne relèvent pas de la Ville et les prévisions sont établies selon l'information disponible au moment de la confection du budget.

Les budgets nécessaires au respect des engagements et des obligations de la ville-centre relativement au soutien financier versé à des organismes relevant de sa juridiction totalisaient 406 M\$ en 2021 comparativement à 171 M\$ en 2016.

Le graphique suivant présente l'ensemble des contributions prévues et versées depuis 2016.

GRAPHIQUE 9

Prévisions et résultats historiques – Dépenses de contributions



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

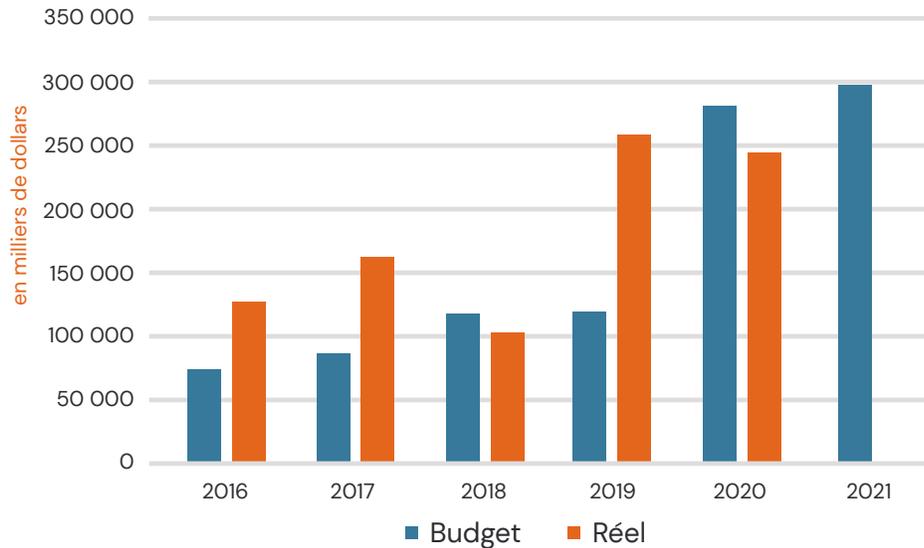
Plusieurs unités d'affaires contribuent au processus d'établissement des prévisions, puisque les contributions accordées aux différents organismes sont soit sous la responsabilité des services et des arrondissements, soit sous la responsabilité de la Direction du budget.

En plus des lacunes de validations et de documentation, la séparation des tâches est inadéquate puisque les responsables des budgets de contributions effectuent à la fois le suivi des contributions dans les fichiers Excel prévus à cette fin et la saisie des données dans l'application SBA, sans qu'une révision soit effectuée par une tierce personne.

En ce qui concerne les contributions accordées par les services et les arrondissements, nous avons constaté qu'elles sont présentées globalement au budget de chacun. En 2021, elles totalisent 296,5 M\$ au budget des services et 32,4 M\$ au budget des arrondissements. Les graphiques suivants exposent les contributions budgétées et versées depuis 2016. Nous constatons qu'en ce qui concerne les arrondissements, les dépenses sont en croissance depuis 2019 et elles sont toujours supérieures aux prévisions établies (voir le graphique 11).

GRAPHIQUE 10

Prévisions et résultats historiques – Dépenses de contributions des services

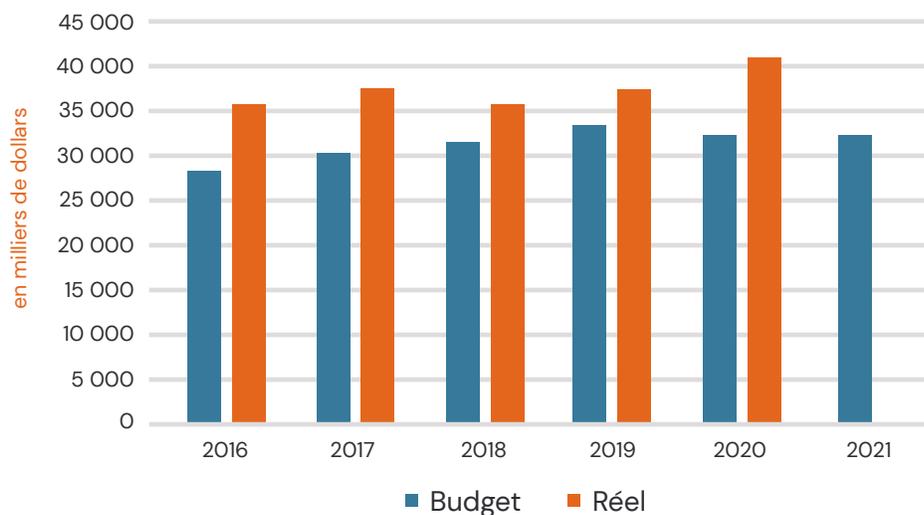


Source: Données compilées par le Bureau du vérificateur général à l'aide des données recueillies dans les systèmes d'information de la Ville.

N. B. L'écart important en 2019 est relié principalement à un reclassement des programmes d'aide et de subventions des services de l'habitation et du développement économique de 113,4M\$ budgétés initialement dans les autres objets de dépenses.

GRAPHIQUE 11

Prévisions et résultats historiques – Dépenses de contributions des arrondissements



Source: Données compilées par le Bureau du vérificateur général à l'aide des données recueillies dans les systèmes d'information de la Ville.

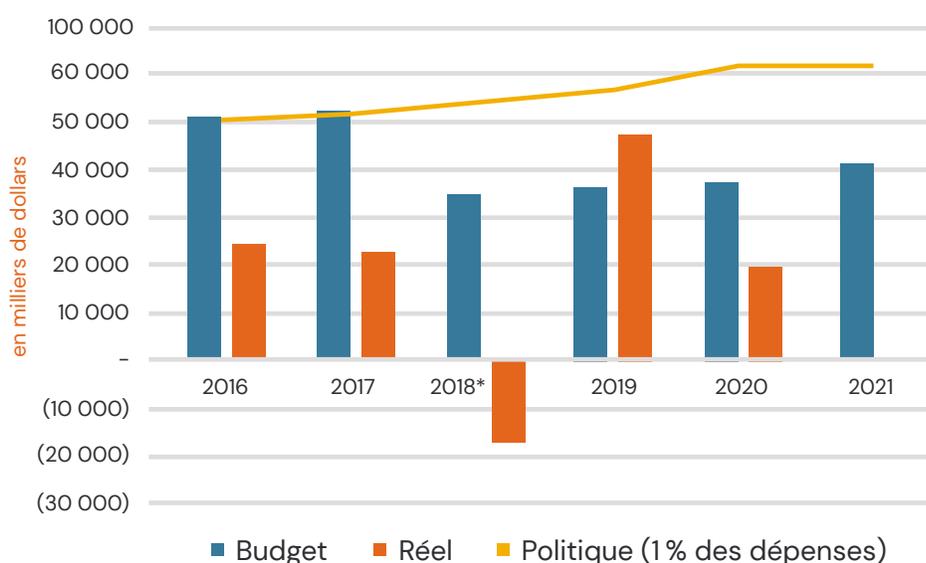
Dépenses communes

Différents postes budgétaires de nature corporative qui ne peuvent être répartis dans les services centraux ou dans les arrondissements, comme le coût des régimes de retraite pour les années de service passées, constituent les dépenses communes. Deux éléments ont retenu notre attention, soit les crédits pour les dépenses contingentes et une économie anticipée de la rémunération non reflétée au budget de la rémunération, qui se retrouve dans le poste budgétaire « autres ».

La Ville budgétise annuellement un montant à titre de réserve pour les dépenses contingentes. Selon la *Politique de l'équilibre budgétaire*, le montant de la réserve devrait correspondre à au moins 1% des dépenses totales prévues au budget afin de parer aux imprévus mineurs de l'année courante, aux règlements des réclamations et aux paiements des condamnations judiciaires. Or, la réserve prévue en 2021 est de 41,8M\$, y compris celles des arrondissements, soit 0,68% seulement du budget. Le graphique suivant illustre l'historique des crédits pour les dépenses contingentes prévues et réalisées comparativement à la cible déterminée.

GRAPHIQUE 12

Prévisions et résultats historiques des crédits pour les dépenses contingentes comparativement au seuil déterminé à la *Politique de l'équilibre budgétaire*



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

* À la reddition de comptes financière de 2018, on explique l'écart favorable des crédits pour les dépenses de contingences principalement par une révision à la baisse de la provision relative aux causes pendantes en justice intentées contre la Ville; des dépenses réalisées dans les unités d'affaires où les budgets ont été transférés pour la réalisation de projets ponctuels et des règlements de litiges pour les réclamations déposées contre la Ville.

Nous observons une diminution de la réserve, ce qui nous apparaît peu prudent dans un contexte très serré de déficit structurel en augmentation où la Ville doit imposer plusieurs coupures pour équilibrer le budget. De plus, la *Politique de l'équilibre budgétaire* de la Ville n'est pas respectée.

En ce qui concerne l'économie anticipée de la rémunération, nous avons constaté qu'un montant de 4,1M\$ prévu au budget en 2015 est reconduit d'année en année alors que cette économie ne s'est jamais réalisée. Ce montant est encore inclus au budget 2021 et est présenté en diminution des dépenses communes. Cet élément, bien que de moins grande valeur, s'ajoute à nos constats relativement aux décisions passées reconduites sans analyse pertinente à leur égard.

Affectation des excédents accumulés

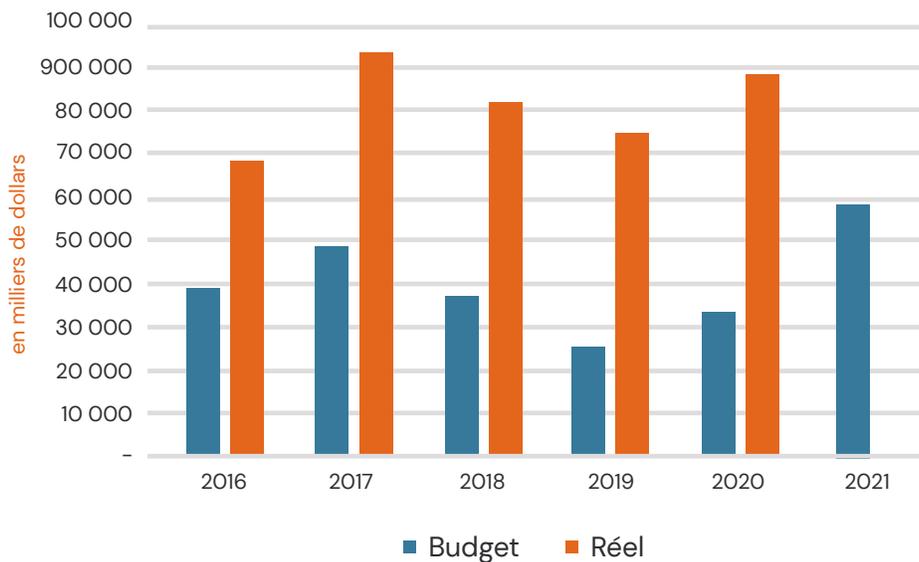
Afin d'atteindre l'équilibre budgétaire, la Ville utilise une part des excédents de fonctionnement qu'elle a accumulé au fil des années. Ces affectations de l'excédent de fonctionnement sont prévues dans le budget puisqu'elles contribuent à financer différents services ou activités à réaliser au cours du prochain exercice financier. D'autres sources de financement sont utilisées à titre d'affectation, par exemple des sommes provenant d'autres organismes ou de réserves financières constituées pour financer des activités spécifiques.

Nous avons constaté que ces prévisions d'affectation sont présentées avec les revenus de la Ville dans le document budgétaire. Cette présentation n'est pas idéale puisqu'elle ne permet pas au lecteur de voir clairement l'écart entre les prévisions de revenus et de dépenses et d'évaluer l'ampleur et la tendance des affectations nécessaires pour combler ce déficit. De plus, elle ne permet pas de faire des comparaisons appropriées avec les états financiers.

Nous avons aussi observé que les prévisions annuelles d'affectation de l'excédent de fonctionnement accumulé sont en croissance depuis 2019 et que l'écart entre celles-ci et les affectations réelles est important. Le graphique suivant présente les affectations qui ont été prévues au budget et qui ont été réalisées depuis 2016.

GRAPHIQUE 13

Affectation de l'excédent de fonctionnement accumulé



Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires et des redditions de comptes financières annuelles de la Ville.

Il ressort de notre analyse des processus, menant à l'établissement des prévisions de revenus et de dépenses qu'ils sont complexes et que certains d'entre eux requièrent une grande quantité de données pour produire l'information pertinente. Or, malgré les efforts déployés, les comparaisons que nous avons effectuées entre les prévisions et les résultats réels ont révélé l'existence de surestimations et de sous-estimations systématiques, parfois de grande ampleur, pour certaines catégories de revenus et de dépenses. Cela crée une sorte de biais structurel qui empêche d'avoir une vision nette du budget, alors qu'il pourrait en être autrement si l'information disponible et les analyses produites étaient davantage utilisées pour prendre les décisions budgétaires.

Finalement, bien que ces processus soient bien structurés, leur documentation devrait être améliorée et formalisée afin de limiter le risque de perte d'expertise lors de départs d'employés spécialisés qui, dans la majorité des cas, sont les seuls à maîtriser les méthodes permettant d'établir les prévisions. Aussi, les contrôles sont insuffisants et doivent être améliorés afin d'y inclure notamment la révision et l'approbation des prévisions par une personne autre que le préparateur, afin de limiter le risque d'erreurs et d'en faire la démonstration.

3.1.2.2.A. Recommandation

Nous recommandons à la Direction générale de considérer dans la méthode d'établissement, la révision des prévisions de revenus et de dépenses qui s'avèrent surévaluées ou sous-évaluées d'année en année, afin que le budget présente plus clairement les sources de financement et les dépenses prévues.

3.1.2.2.B. Recommandation

Nous recommandons au Service des finances d'améliorer la documentation et les contrôles afin de démontrer que les hypothèses utilisées et les prévisions de revenus et de dépenses reposent sur un processus rigoureux.

3.1.2.2.C. Recommandation

Nous recommandons au Service des finances d'instaurer des mécanismes de validation afin de s'assurer que le plan de l'effectif représente le nombre d'années-personnes selon la définition établie et que les prévisions relatives aux dépenses de rémunération de chaque unité d'affaires reflètent adéquatement ce plan.

3.1.2.2.D. Recommandation

Nous recommandons à la Direction générale de s'assurer que le budget global de fonctionnement de la Ville de Montréal comporte une réserve pour les dépenses contingentes, comme le prévoit la *Politique de l'équilibre budgétaire*.

3.1.2.2.E. Recommandation

Nous recommandons à la Direction générale d'évaluer l'ampleur de l'écart structurel entre les revenus et les dépenses afin de déterminer les sources de financement qui permettraient d'y remédier et de limiter l'utilisation d'excédents accumulés non affectés pour équilibrer le budget.

3.1.3. Confection des enveloppes budgétaires

Il est de la responsabilité de la Direction du budget d'établir et de transmettre les enveloppes budgétaires, ainsi que de déterminer les orientations budgétaires à communiquer aux unités d'affaires. Le processus de confection des enveloppes budgétaires des services centraux est différent de celui des enveloppes budgétaires destinées aux arrondissements. De plus, deux équipes distinctes sont affectées aux différents processus décrits ci-après.

3.1.3.1. Enveloppes budgétaires des services centraux

Afin de déterminer le montant du budget qui sera alloué à chacun des services, la Direction du budget doit assurer le suivi de tous les éléments pouvant influencer le montant de leur enveloppe budgétaire respective. Un fichier Excel détaillant l'ensemble des enveloppes budgétaires de chacun des services permet de suivre chacune des étapes de la confection des enveloppes budgétaires.

Ce fichier indique pour chacun des services :

- le montant du budget de l'année précédente;
- le montant d'augmentation (l'indexation et les ajustements) de la rémunération pour l'année à venir;
- les montants transférés d'une unité d'affaires à une autre;
- le montant des dépenses autofinancées par un revenu équivalent;
- le montant d'indexation des dépenses autres que la rémunération;
- le montant des contraintes budgétaires imposées et les décisions du comité de budget administratif et du comité de budget politique.

Le cumul des éléments précédents correspond au montant de l'enveloppe budgétaire qui sera accordée pour la prochaine année. Une validation est faite entre le fichier de suivi des enveloppes budgétaires et le cadre financier préliminaire afin de s'assurer que ces dernières reflètent le montant prévu au cadre financier.

La Direction du budget envoie les enveloppes budgétaires simultanément avec les orientations et les instructions budgétaires. Elles sont transmises aux directeurs des services ainsi qu'aux intervenants de la DCSF qui leur sont attitrés. Bien que les grandes orientations budgétaires soient présentées par la Direction du budget à la DCSF, cette dernière gagnerait à être informée quelques jours à l'avance des orientations spécifiques prévues aux enveloppes des services, afin de pouvoir se préparer et répondre à leurs questions.

Voici un résumé des principales orientations du budget de fonctionnement 2021 pour les services centraux:

- Les dépenses autres que la rémunération ont été indexées de 1,9%;
- Un effort équivalent à 50% des indexations précédentes (la rémunération et les autres dépenses) a été retranché des enveloppes budgétaires à titre de participation à l'équilibre budgétaire;
- Les besoins additionnels des services devront être financés par des réductions équivalentes dans les autres dépenses du service, aucune demande additionnelle ne sera acceptée ou analysée après l'envoi des enveloppes budgétaires;
- Les services doivent revoir la tarification de leurs services afin que leurs revenus génèrent une augmentation de 1,9% qui a déjà été considérée pour atteindre l'équilibre budgétaire 2021. Cette hausse ne peut être considérée pour augmenter leurs dépenses ou compenser la baisse d'une autre source de revenus.

À la fin de la période de confection des budgets par les services, les montants totaux de revenus et de dépenses entrés dans l'application SBA sont validés pour s'assurer qu'ils correspondent aux totaux de revenus et de dépenses inscrits dans leur enveloppe budgétaire respective. Si un écart est décelé, le service responsable est avisé de corriger la situation afin que les directives soient respectées.

Bien que la DCSF et la Direction du budget soient responsables de préparer les évolutions budgétaires des services et de consolider l'information financière en cours d'exercice (avec l'information réelle), on ne tient pas compte des résultats prévisionnels de l'année pour établir les orientations et les enveloppes budgétaires en cours d'élaboration.

Les services audités considèrent d'ailleurs que l'on devrait tenir compte des résultats historiques des dernières années ainsi que des tendances observées dans les résultats prévisionnels de l'année en cours. Selon eux, la méthode actuelle pour établir les enveloppes budgétaires ne reflète pas leur réalité.

Bien que des rencontres ont lieu entre les services et leurs DGA pour discuter et présenter leur budget, ils considèrent qu'ils devraient être formellement consultés dans l'établissement des enjeux, des priorités et des orientations budgétaires avant l'établissement des enveloppes budgétaires définitives.

3.1.3.1.A. Recommandation

Nous recommandons à la Direction générale de consulter les services afin de considérer le niveau de service attendu et de prendre en compte leurs résultats historiques avant la détermination des orientations et des enveloppes budgétaires et d'informer toutes les personnes impliquées dans la confection des budgets des services centraux.

3.1.3.2. Enveloppes budgétaires (transferts centraux) destinées aux arrondissements

Les transferts centraux reflètent la part de la Ville versée aux arrondissements pour constituer leur budget afin qu'ils puissent assumer l'ensemble des responsabilités découlant de leurs compétences locales et déléguées par la ville-centre ou subdéléguées par le CG.

Il s'agit d'une source de financement importante des arrondissements qui représente 73 % de leur budget de revenus en 2021. Les autres sources, soit 27 % des revenus prévus, proviennent de la taxation locale, des revenus locaux et des affectations de surplus.

Le processus actuel menant à la détermination du montant de ces transferts repose sur une réflexion entreprise par la Ville en 2012 dans le contexte où les arrondissements estimaient manquer de moyens pour remplir leurs obligations. L'objectif de cette démarche était de développer un modèle de financement qui assurerait une plus grande équité entre les arrondissements et une meilleure compréhension de la base de détermination de leurs transferts en provenance de la Ville. Cet exercice stratégique de réallocation des budgets de fonctionnement était dirigé par le SF, en collaboration avec le CIRANO¹⁰, et il était guidé par les principes¹¹ directeurs suivants :

- Le respect de la capacité de payer des contribuables;
- Les services de qualité aux citoyens;
- La vision cohérente de la Ville : le niveau de service, la fiscalité;
- La stabilité et la prévisibilité du financement;
- L'équité;
- La recherche de la performance (les meilleures pratiques/les meilleurs coûts/ les économies d'échelle).

La RFA incluait également une révision de la gouvernance et du partage des compétences, en respectant leur autonomie et leur imputabilité, ainsi que l'établissement de paramètres de répartition et de normes (si requis) pour chaque activité. Ainsi, une revue des budgets de fonctionnement de 12 activités a été effectuée mettant à contribution un groupe de travail, pour chaque activité. Ces groupes étaient constitués d'experts issus des arrondissements, des services centraux, des représentants du SF et du Service de concertation des arrondissements (SCA) et des ressources matérielles. Un comité directeur a également été formé et mandaté pour réviser les travaux des différents groupes de travail et pour formuler des recommandations structurantes dans une vision globale et cohérente.

¹⁰ Centre interuniversitaire de recherche en analyse des organisations.

¹¹ Principes énoncés lors d'une conférence de presse tenue le 8 juillet 2014 sur la réforme du financement des arrondissements.

En 2014, il a été recommandé d'appliquer la RFA établie lors des travaux réalisés et de procéder à une mise en œuvre progressive de cette réforme qui impliquait la réduction des transferts de 9 arrondissements (entre 0,4M\$ et 11,8M\$ par arrondissement) et l'augmentation de ceux des 10 autres (entre 0,9M\$ et 9,5M\$ par arrondissement). Ainsi, on prévoyait répartir les augmentations sur 5 ans et les réductions sur 10 ans, ce qui impliquait une augmentation globale des budgets des arrondissements de 3,7M\$ par an, soit 18,6M\$ sur 5 ans¹², soit de 2015 à 2019.

Il y a également été recommandé d'harmoniser la tarification des permis de construction et de rénovation et de rapatrier les pouvoirs de tarification à la ville-centre. Il a donc été convenu avec les arrondissements d'augmenter leurs transferts pour remplacer leur budget de revenus de 2014 et de leur remettre en fin d'année les sommes excédentaires perçues. Ainsi, les transferts aux arrondissements ont augmenté de 23,6M\$ en 2015 pour refléter cette décision.

La Charte, article 186, annexe C stipule que :

« 186. Le conseil de la ville peut, dans son règlement intérieur, aux conditions et selon les modalités qu'il détermine, déléguer à un conseil d'arrondissement :

1° l'adoption ou l'application de tout règlement que le conseil détermine;

2° tout pouvoir lié à la mise en œuvre d'une compétence relevant du conseil de la ville et pour lequel des crédits sont prévus dans la dotation annuelle prévue à l'article 143 de la charte de la ville.

143. La ville fixe la dotation annuelle de chacun des conseils d'arrondissement selon une formule qu'elle détermine et qui établit notamment des éléments de péréquation entre les arrondissements ».

Depuis 2016, des ajustements sont apportés annuellement aux montants des transferts afin de les indexer et de refléter la mise à jour des paramètres établis lors de la réforme. Aussi, des changements apportés en 2017 ont engendré une réduction importante des transferts aux arrondissements, soit notamment la centralisation à la ville-centre de la gestion des contrats de déneigement (-60,7M\$) et du matériel roulant (-66,3M\$). Les paramètres établis ont de nouveau été revus afin de répartir de manière équitable l'impact de ces changements.

D'autres ajustements ont été apportés, entre autres une réduction depuis 2018 pour refléter la participation des arrondissements à l'effort de financement des régimes de retraite et des ajouts pour l'entretien de nouvelles infrastructures. Des transferts entre unités d'affaires ou la révision du modèle d'affaires des services centraux ont aussi affecté le montant des transferts annuels. De plus, à la suite d'une révision des paramètres utilisés pour 3 secteurs d'activités (les bibliothèques, le déneigement, les parcs) en 2019, une bonification de 13,1M\$ a été accordée et répartie sur 2 ans, soit pour les budgets de 2020 et 2021.

¹² Lors de la RFA, le montant total des budgets des arrondissements était de 990,1M\$ (y compris les transferts centraux) et devait augmenter à 1 008,7M\$ en 2019, sans tenir compte de l'indexation.

Le calcul des transferts aux arrondissements à prévoir au budget de fonctionnement annuel est effectué au tout début du processus budgétaire. On procède à la collecte de renseignements auprès des services centraux et d'autres sources (p. ex. le décret sur la population publié annuellement par le gouvernement du Québec) et à la saisie de ceux-ci dans un modèle inclus dans un fichier Excel. Par la suite, l'augmentation qui en découle par rapport au budget précédent est intégrée au cadre financier préliminaire utilisé pour déterminer les orientations budgétaires. Pour 2021, celles retenues à l'égard des transferts centraux aux arrondissements étaient les suivantes:

- L'indexation des transferts de 1%;
- La mise à jour des paramètres établis lors de la RFA;
- La bonification des transferts pour les activités de déneigement, des parcs et des bibliothèques (le versement de la 2^e tranche, indexée de 1%);
- La participation des arrondissements à l'effort de financement permanent et récurrent lié à l'abolition, au budget 2018, des mesures transitoires relatives aux régimes de retraite (de 2018 à 2021, 4 M\$ annuellement pour un cumul de 16 M\$).

Nous avons constaté que le montant des transferts aux arrondissements est principalement basé sur le budget paramétré en 2014 et sur les critères, paramètres et indicateurs établis lors de la RFA. Toutefois, bien que des ajustements aient été apportés au fil du temps pour refléter différents changements découlant de la centralisation d'activités et leur évolution, ces transferts n'ont pas fait l'objet d'une réévaluation, dans leur ensemble, pour déterminer s'ils reflètent bien les besoins actuels des arrondissements et si les paramètres utilisés sont toujours appropriés. Une révision du modèle paramétrique était pourtant prévue après cinq ans, mais n'a pas été réalisée.

Conséquemment, des modifications sont apportées à la pièce, notamment lorsque des questions sont soulevées par les arrondissements quant à la pertinence de certains paramètres. Par exemple, les paramètres utilisés pour déterminer les transferts relatifs aux bibliothèques (p. ex. des prêts et des retours de livres) ont été modifiés pour tenir compte des documents numériques dont la demande est en croissance. C'est donc la superficie des bibliothèques qui est maintenant considérée et qui a donné lieu à la bonification accordée pour ce secteur d'activités en 2020 et 2021.

Nous avons aussi constaté que les réductions de budget recommandées lors de la RFA pour corriger les surdotations ont cessé en 2020 bien qu'elles devaient se poursuivre pendant 10 ans, soit jusqu'en 2024. Ainsi, la réduction annuelle des transferts de 3,7 M\$, répartie entre 9 arrondissements, n'a plus lieu et fait en sorte que l'objectif d'équité entre les arrondissements visé en 2014 n'est atteint que partiellement.

D'ailleurs, aucune analyse n'a été effectuée pour déterminer si les transferts sont représentatifs des compétences dévolues aux arrondissements et des services aux citoyens, et s'ils correspondent à leur juste part des taxes perçues par la ville-centre pour ces services. Selon l'information obtenue, les transferts centraux permettent

de moins en moins de combler les besoins des arrondissements compte tenu des contraintes imposées au cours des dernières années. En effet, le pourcentage d'indexation des transferts est inférieur à celui des dépenses nécessaires pour répondre aux exigences en matière de niveau et de qualité de services. Par exemple, les dépenses de rémunération d'un arrondissement audité augmenteront de 3,41% en 2021 alors que le montant du transfert est indexé de 1%.

Également, selon les arrondissements audités, les contraintes imposées depuis 2017, dont celles concernant la gestion des postes vacants font fi de la réalité, des résultats historiques et des événements prévisibles et ont les conséquences suivantes :

- Utilisation des surplus et des réserves pour équilibrer le budget (solution ponctuelle qui ne peut être récurrente à long terme);
- Augmentation des tarifs exigés aux citoyens et/ou activités confiées en impartition afin de maintenir le niveau de service (p. ex. pour les loisirs);
- Épuisement des effectifs.

Le tableau suivant démontre que les transferts centraux aux arrondissements ont diminué depuis 2014, en proportion de leur budget, et que cette diminution varie d'un arrondissement à l'autre. Notons que les arrondissements ont l'autonomie pour prendre des décisions quant au niveau de revenus locaux à percevoir pour équilibrer leur budget, ce qui peut influencer légèrement sur le pourcentage des transferts centraux par rapport au budget.

TABLEAU 5

Évolution des transferts centraux aux arrondissements

Arrondissement	Pourcentage du budget							
	2014	2015 ^[b]	2016	2017 ^[c]	2018	2019	2020	2021
19 arrondissements	77,8	80,7	79,4	75,2	74,5	73,5	73,0	73,0
Arrondissement de Mercier–Hochelaga–Maisonneuve	79,8	83,9	84,0	80,7	81,0	80,2	79,3	79,4
Arrondissement de Saint-Laurent	76,9	80,0	78,3	74,4	74,3	74,2	74,0	74,1
Arrondissement de Ville-Marie ^[a]	62,7	68,7	67,0	58,8	55,7	50,7	49,5	49,1

^[a] Cet arrondissement bénéficie d’une portion importante de revenus locaux, ce qui explique les proportions inférieures à celles des autres arrondissements.

^[b] L’augmentation de la proportion des transferts centraux en 2015 est principalement due à l’intégration des revenus de permis de construction et de la modification à ceux-ci.

^[c] La diminution de la proportion des transferts centraux s’explique par la centralisation d’activités à la ville-centre (p. ex. la gestion des contrats de déneigement, du matériel roulant et de la téléphonie).

Source: Données compilées par le Bureau du vérificateur général à l’aide de l’information présentée dans les documents budgétaires annuels de la Ville.

Aussi, à l’examen du montant des transferts par habitant depuis 2017, soit depuis la centralisation de certaines activités à la ville-centre, nous constatons une légère diminution en 2021 et une augmentation globale de 3,5%. Cette augmentation est cependant inférieure à la croissance du budget de dépenses, notamment à celle du budget de rémunération par habitant qui fut de 8,9% pendant la même période. De plus, comme le démontre le tableau suivant, ces variations diffèrent d’un arrondissement à l’autre.

TABLEAU 6

Évolution des transferts centraux et du budget de rémunération par habitant

Arrondissement	2017	2018	2019	2020	2021	Variation
	\$ transfert/habitant					
19 arrondissements	370	372	374	384	383	3,51 %
Arrondissement de Mercier–Hochelaga–Maisonnette	342	352	361	373	370	8,19 %
Arrondissement de Saint-Laurent	498	507	505	522	519	4,22 %
Arrondissement de Ville-Marie ^[a]	558	547	521	513	498	-10,75 %
	\$ rémunération/habitant					
19 arrondissements	326	332	336	353	355	8,90 %
Arrondissement de Mercier–Hochelaga–Maisonnette	293	296	295	329	331	12,97 %
Arrondissement de Saint-Laurent	443	449	451	475	474	7,00 %
Arrondissement de Ville-Marie ^[a]	581	591	579	590	584	0,52 %

^[a] Cet arrondissement bénéficie d'une portion importante de revenus locaux, ce qui explique les proportions inférieures à celles des autres arrondissements.

Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les systèmes d'information de la Ville.

Les arrondissements audités nous ont également fait part d'un enjeu important pour les prochaines années lié au financement des dépenses de fonctionnement et d'entretien des nouvelles infrastructures ou en cours de construction. Selon l'information obtenue, bien que des sommes aient été déterminées à cette fin dans le programme décennal d'immobilisations 2021-2030 et qu'elles soient présentées dans le cadre financier de la période 2021-2025, les arrondissements ne disposent d'aucune information concernant les sources de financement dont elles disposeront pour faire face à ces dépenses.

Les arrondissements ne sont d'ailleurs pas consultés formellement avant l'établissement des orientations budgétaires et la détermination du montant de leurs transferts. De plus, l'information qui leur est fournie à cet égard pourrait être bonifiée, car ceux-ci doivent faire des demandes spécifiques au SF pour comprendre la nature de certains ajustements et s'assurer que les décisions préalablement approuvées et tous les changements pertinents sont considérés.

Finalement, les contrôles permettant d'assurer l'exactitude des transferts accordés à chaque arrondissement pourraient être améliorés puisqu'un arrondissement nous a mentionné avoir détecté des erreurs. Par exemple, pour le budget 2021, les crédits supplémentaires autorisés pour réaliser certaines activités d'entretien de nouvelles infrastructures avaient été omis, ce qui a nécessité une correction du montant du transfert. Selon l'information obtenue, les données recensées par le SF pour déterminer les montants des transferts ne font pas l'objet d'une validation pour s'assurer de leur exhaustivité et ceux-ci ne sont pas révisés ni approuvés avant leur transmission aux arrondissements.

3.1.3.2.A. Recommandation

Nous recommandons à la Direction générale de revoir la méthode utilisée pour répartir les transferts centraux aux arrondissements afin de s'assurer qu'elle permet encore d'allouer les budgets de manière équitable, selon les compétences qui leur sont dévolues, et de répondre aux exigences de la Ville de Montréal en matière de qualité et du niveau de services aux citoyens.

3.1.3.2.B. Recommandation

Nous recommandons au Service des finances de bonifier l'information transmise aux arrondissements, ainsi que les contrôles, afin que ces derniers aient l'assurance que les transferts centraux reflètent fidèlement les décisions prises et les changements survenus au cours de l'année précédente.

3.2. Confection des budgets

Les enveloppes budgétaires accompagnées des orientations, des instructions et des formulaires budgétaires sont habituellement transmises en juin aux unités d'affaires qui préparent leur budget durant la période estivale. Pour ce faire, les services centraux sont épaulés par la DCSF, tandis que les arrondissements disposent de leurs propres équipes de support financier.

Lorsque les services centraux et les arrondissements ont complété leurs prévisions budgétaires, ils doivent expliquer les écarts avec le budget de l'année précédente dans une annexe selon le format prescrit par le SF.

Les données budgétaires de chaque service ou arrondissement préparées sur Excel doivent être saisies manuellement dans l'application SBA. La documentation budgétaire de chaque unité d'affaires est conservée dans chaque arrondissement ou service et/ou à la DCSF.

3.2.1. Confection des budgets des services centraux

Au fil des années, chaque service a développé son propre processus budgétaire avec l'aide de son équipe de conseillers de la DCSF. Dans chacun des services, toutes les divisions sont mises à contribution dans la préparation du budget. Règle générale, suite à la réception de l'enveloppe budgétaire et de la cible à atteindre quant au montant total du budget à respecter, une première évaluation du budget du service est faite par l'équipe de la DCSF. Depuis plusieurs années, la cible implique des coupures à effectuer dans la plupart des budgets des services.

La Direction du service énonce alors les orientations et les objectifs budgétaires afin de respecter le montant de l'enveloppe budgétaire et les directives sont transmises aux gestionnaires responsables (les directeurs, les chefs de division, les chefs de section). Tout au long du processus, des rencontres fréquentes de suivi ont lieu entre la DCSF et la Direction du service. Lorsque les directions et les divisions ont terminé leur budget respectif, si le budget est en déséquilibre, le responsable du DCSF prépare différents scénarios de coupure qu'il soumet au directeur du service et au comité de direction. C'est toujours le directeur du service qui prend les décisions finales.

Les documents justificatifs sont conservés à la DCSF. Néanmoins, aucune vérification n'est faite pour s'assurer que les orientations et les directives ont été suivies à l'exception du respect du montant total de l'enveloppe budgétaire.

Dans le cadre de notre audit, nous avons examiné le processus de confection de trois services, soient le SPVM, le SE et le SCA. Des constats globaux sont exposés ci-après, ainsi que des constats spécifiques à chacun des services.

Globalement, nous avons constaté que les enveloppes budgétaires sont calculées à partir du budget de l'année précédente auquel on applique, de façon uniforme les orientations budgétaires. Contrairement à la *Politique de l'équilibre budgétaire* de la Ville, la dotation budgétaire ne repose pas sur une analyse des résultats historiques, sur le niveau de service ou d'activité requis ou sur une analyse des nouveaux enjeux auxquels les services devront faire face.

Comme nous l'avons mentionné précédemment, les services doivent s'assurer que le total de leur budget corresponde au montant fixé par le SF et apparaissant dans leur enveloppe budgétaire. Ils doivent toutefois respecter leurs obligations contractuelles et légales comme stipulé dans les orientations particulières. Or, ce montant est obtenu à partir d'ajustements apportés au budget de l'année précédente qui provient lui-même du montant du budget de l'année précédente ajusté.

Nous avons aussi constaté que les politiques financières ne sont pas diffusées au personnel impliqué dans la confection du budget et qu'aucune mention à titre de référence ne se retrouve dans les orientations et les instructions budgétaires. Nous avons validé avec les services audités s'ils connaissaient ces politiques et la majorité d'entre eux nous ont dit les ignorer. De plus, certains représentants de la DCSF connaissaient seulement la *Politique de capitalisation et d'amortissement des dépenses en immobilisation*.

Nous avons constaté lors de notre audit que les rôles et les responsabilités des différentes parties prenantes autant au niveau des services qu'au niveau des intervenants du DCSF impliqués dans le processus budgétaire, ne sont pas connus et ne sont pas clairement définis ou documentés. Nous avons également remarqué qu'ils peuvent varier d'un service à l'autre dépendamment des forces et des besoins de chacun et que cela semble convenir à la plupart d'entre eux. Cet équilibre tient grâce aux individus en place et pourrait s'effondrer à la suite d'un changement de personnel. Une documentation des rôles et des responsabilités de chacun permettrait d'éviter d'éventuelles situations conflictuelles.

Aussi, aucun des processus budgétaires des services audités ne prévoyait des mécanismes de contrôles et d'approbation assurant la qualité de l'information.

Le principe de base sur lequel s'appuient les pratiques de gestion exposées dans les politiques de la Ville, énoncées dans la partie 1.2., est que les gestionnaires doivent respecter l'équilibre budgétaire. Or, nous avons pu constater que certains services sont déficitaires d'année en année et que cela est déjà prévisible lors de la préparation budgétaire. Ceci contredit le principe de la *Politique de l'équilibre budgétaire* selon lequel les hypothèses sur lesquelles sont fondées les prévisions de revenus et de dépenses doivent être réalistes et prudentes.

Il est également indiqué dans les pratiques de gestion, énoncé dans la *Politique de l'équilibre budgétaire*, que les gestionnaires sont responsables des budgets qui leur sont attribués. Nous avons observé lors de notre audit qu'aucune mesure de redressement n'était imposée ou même demandée aux services qui préoyaient un déficit en cours d'exercice. Des déficits récurrents sont le fruit d'une sous-estimation systématique des coûts et d'une gestion inappropriée (l'absence d'un contrôle adéquat). Cela signifie que de toute façon les gestionnaires ne sont pas vraiment redevables de l'atteinte des objectifs budgétaires qui leur sont donnés puisqu'ils savent que leur déficit sera compensé.

Bien que certains services aient pris l'initiative de créer des systèmes leur permettant de suivre les coûts de certaines de leurs activités, cela n'a pas été étendu à tous les services et ce n'est pas une exigence de l'Administration municipale ou une exigence des politiques de la Ville. Dans ce contexte, cette dernière n'est pas en mesure d'évaluer quelle quantité et/ou la qualité de service ou d'activité devraient procurer les montants des dépenses budgétées. C'est l'une des critiques principales émises par les services que nous avons consultés. En l'absence de balises quant au niveau de service et au coût par activité, l'imputabilité des services est compromise face au respect de leur budget.

Des plans opérationnels permettant d'appliquer les orientations et les objectifs devraient être faits dans chacun des services. Ces plans devraient permettre d'établir clairement le niveau de service et les activités qu'on prévoit dispenser. Des indicateurs de mesures devraient être adoptés afin qu'une reddition de comptes sur la mesure de ces résultats soit produite périodiquement en plus de la reddition de comptes « traditionnelle » qui ne vise qu'à présenter les écarts entre le budget et le réel et à les expliquer sommairement.

Nos travaux ont fait ressortir des constats spécifiques aux services centraux sélectionnés. Ces constats sont exposés aux sections suivantes.

Service de l'eau

Le budget du service adopté pour 2021 est de 274 M\$. Un montant de 83 M\$ a été budgété à titre de rémunération globale soit 30,4 % du budget de fonctionnement. Le budget du SE a la particularité de présenter les frais de financement et le remboursement de la dette à long terme (service de la dette) relative aux infrastructures de l'eau, soit 102 M\$ pour 2021. Cela représente 37,3 % du budget du service.

Les dépenses relatives au service de la dette sont significativement à la hausse depuis les trois dernières années et le SE n'a aucun contrôle sur celles-ci. Comme démontré au tableau suivant, il existe de grands écarts entre le montant budgété et le réel pour ce poste budgétaire, principalement causé par la méthode de répartition du service de la dette qui a été établie en 2006 et n'a pas été révisée depuis. Cette répartition budgétaire ne tient pas compte notamment des investissements importants pour la réfection des infrastructures au cours des dernières années alors que le service de la dette réel prend en compte le financement de ces infrastructures. Ces écarts défavorables génèrent des déficits pour le SE.

Le tableau suivant démontre l'impact sur le surplus ou le déficit du SE si on soustrait la dépense relative au service de la dette des résultats. On remarque que le SE a tout de même réalisé un déficit en 2019 et un léger surplus en 2020.

TABLEAU 7

Analyse des surplus et déficits pour le Service de l'eau

Année	Avec service de la dette	Déficit relatif au service de la dette	Sans service de la dette
	Écart budget/réel Surplus (déficit) En milliers de dollars	Écart budget/réel Surplus (déficit) En milliers de dollars	Écart budget/réel Surplus (déficit) En milliers de dollars
2017	(161)\$	(3 433)\$	3 272 \$
2018	3 588 \$	(490)\$	4 078 \$
2019	(8 076)\$	(5 555)\$	(2 521)\$
2020	(4 747)\$	(5 223)\$	476 \$

Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les redditions de comptes financières et dans les systèmes d'information de la Ville.

Lors de notre audit, nous avons constaté que le budget du SE comprend une contrainte de 10M\$ sans coupure d'activité ou de réduction du niveau de service. Ce montant négatif de 10M\$ présenté distinctement en diminution du budget a été inclus depuis 2017 pour anticiper au budget global les surplus généralement constatés au SE dans les résultats de fin d'année.

Le niveau de cette contrainte a été établi dans un contexte budgétaire qui n'est plus actuel et où les surplus ne sont plus à la hauteur de ceux observés auparavant. Cette contrainte est difficile à réaliser pour le SE comme nous pouvons le constater ci-dessus. Il est risqué de budgéter une contrainte « sans coupure d'activité ». Étant donné que la coupure n'est pas intégrée directement dans le budget des opérations du SE, ce dernier peut quand même dépenser les crédits budgétaires et provoquer un déficit.

Le résultat de l'année 2019 illustre bien le risque de budgéter une contrainte « sans coupure d'activité ». Étant donné que la coupure n'est pas intégrée directement dans le budget des opérations du SE, ce dernier peut quand même dépenser les crédits budgétaires et provoquer un déficit.

Cette contrainte de 10M\$ imposée depuis des années au SE représente un frein pour les gestionnaires d'assumer pleinement leur rôle de gestion et de préparer un budget qui représente réellement le niveau de service selon les moyens qu'on leur accorde. Ceci ne favorise pas leur imputabilité.

Le SE estime que l'enveloppe budgétaire actuelle ne permet pas la mise en place d'une stratégie agressive d'auscultation pour améliorer la connaissance des actifs, la préparation des investissements et la mise en place des structures de gouvernance requise par l'ampleur de certains projets d'envergure.

Considérant les investissements importants en immobilisation effectués au cours des dernières années et ceux à réaliser à court et à moyen terme, et considérant les coupes budgétaires des dernières années, le SE peine à trouver le budget requis pour entretenir les nouveaux équipements. De plus, le SE craint de ne pouvoir faire face à la hausse des coûts d'exploitation et de ne pouvoir ralentir la progression du déficit du maintien des actifs dans les années à venir.

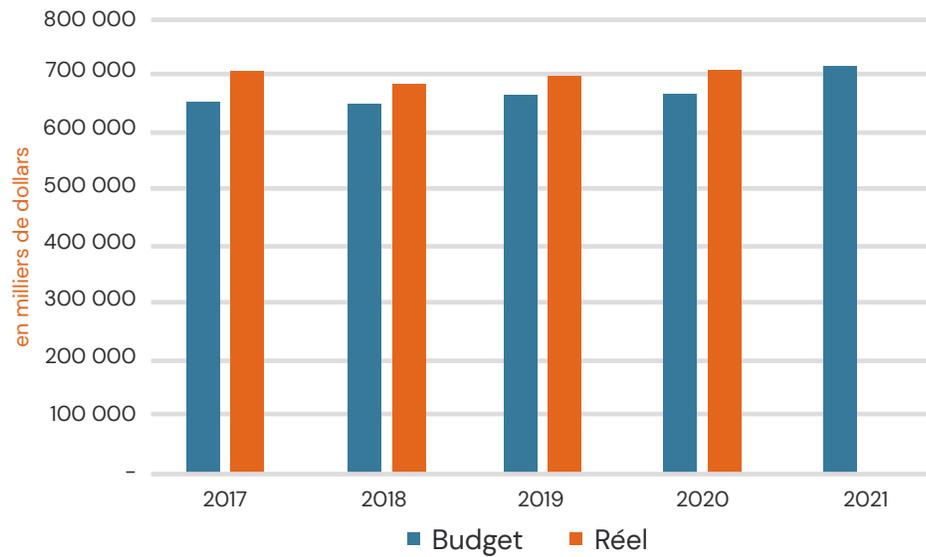
Service de Police de la Ville de Montréal

Pour 2021, le budget de fonctionnement du SPVM est de 679M\$. Pour réaliser sa mission, 5 903 années-personnes ont été budgétées selon le document budgétaire 2021. La rémunération globale incluant les cotisations de l'employeur s'élève à 655M\$ ce qui représente 96,5% du budget adopté en 2021.

Comme illustré au graphique suivant, le SPVM présente annuellement, depuis 2017, des excédents de dépenses importants par rapport à son budget de l'ordre de 49M\$ en 2017, 35,7M\$ en 2018, 33,3M\$ en 2019 et 43,7M\$ en 2020.

GRAPHIQUE 14

Prévisions et résultats historiques – Service de Police de la Ville de Montréal (dépendances totales)



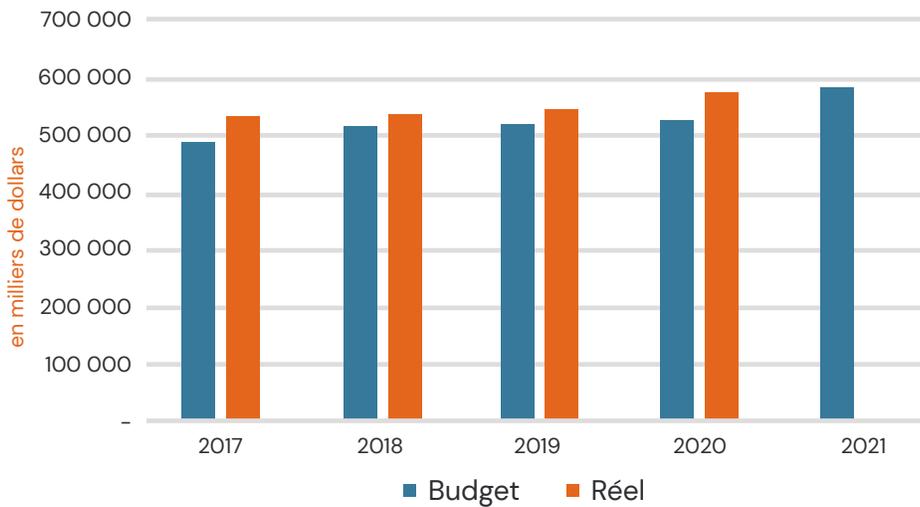
Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières de la Ville.

Au chapitre de la rémunération globale des effectifs, si on ne tient pas compte du temps supplémentaire et des employés civils, le graphique suivant illustre l'écart entre le budget accordé et le réel observé annuellement.

GRAPHIQUE 15

Prévisions et résultats historiques – Service de Police de la Ville de Montréal

(rémunération globale du Service de Police de la Ville de Montréal (excluant les employés civils) – temps régulier)



Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information des systèmes informatiques de la Ville.

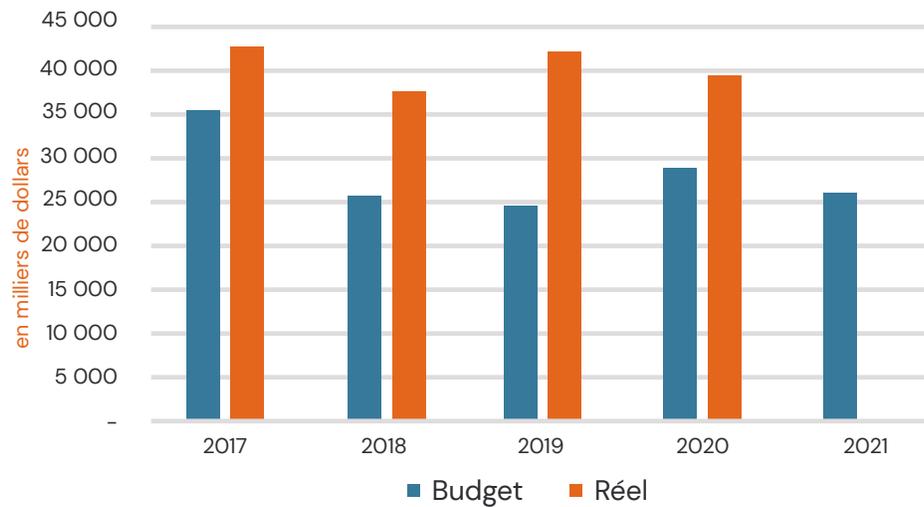
Nous constatons au graphique précédent que le budget alloué ne couvrait pas la dépense de rémunération sans tenir compte du temps supplémentaire. Encore une fois, des écarts majeurs sont constatés, respectivement de 45 M\$ en 2017, 23 M\$ en 2018, 25 M\$ en 2019 et 43 M\$ en 2020. Bien que l'on dénote une hausse au budget 2021, cette dernière est essentiellement liée à l'augmentation de la charge du régime de retraite.

De plus, l'analyse du temps supplémentaire révèle que, année après année, ce poste budgétaire est sous-budgété comme le révèle le prochain graphique.

GRAPHIQUE 16

Prévisions et résultats historiques – Service de Police de la Ville de Montréal

(rémunération globale du Service de Police de la Ville de Montréal (excluant les employés civils) – temps supplémentaire)



Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information des systèmes informatiques de la Ville.

Des montants de 7M\$ en 2017, 12M\$ en 2018, 17M\$ en 2019 et 11M\$ en 2020 ont été dépensés en sus du budget adopté.

Des économies dans les postes budgétaires relatifs aux effectifs civils et aux biens non durables permettent de résorber une partie des déficits annuels.

Selon les responsables du budget du SPVM, ce dernier ne reçoit pas la dotation budgétaire suffisante pour couvrir les obligations liées à la structure des effectifs autorisée et les paramètres de la convention collective ou les orientations maintenues par l'Administration municipale. Par conséquent, il n'est pas possible de respecter la *Politique de l'équilibre budgétaire* à moins de procéder à une importante réorganisation des ressources et à des suppressions de postes des effectifs policiers.

Dans le guide technique de préparation du budget 2021, on retrouve l'orientation suivante:

1. Orientations particulières

Les unités d'affaires, de concert avec leur représentant en ressources financières respectif, doivent pour 2021, prévoir les crédits requis de manière à honorer leurs obligations contractuelles et légales. Ceci permettra au trésorier de procéder à l'émission du certificat des finances et aux unités d'affaires de maximiser leurs engagements liés à leur plan d'affaires respectifs et, par voie de conséquence, à celui de la Ville.

Rappelons que l'orientation générale demeure, à savoir que l'enveloppe transmise en juillet doit être respectée.

Le SPVM est un exemple d'une unité d'affaires à déficit récurrent par rapport au budget alloué. Son budget global est sous-financé systématiquement, attribuable à la sous-évaluation de la rémunération. Le maintien dans le temps de cette situation conduit à un désintéressement des gestionnaires vis-à-vis de l'équilibre budgétaire, lequel ne tient pas compte de la réalité opérationnelle de l'unité. Ils se sentent de moins en moins concernés par la nécessité pratique de respecter leur budget. Pour la Ville, c'est un problème important; car comment les rendre imputables d'un budget dont les nécessités opérationnelles sont ignorées.

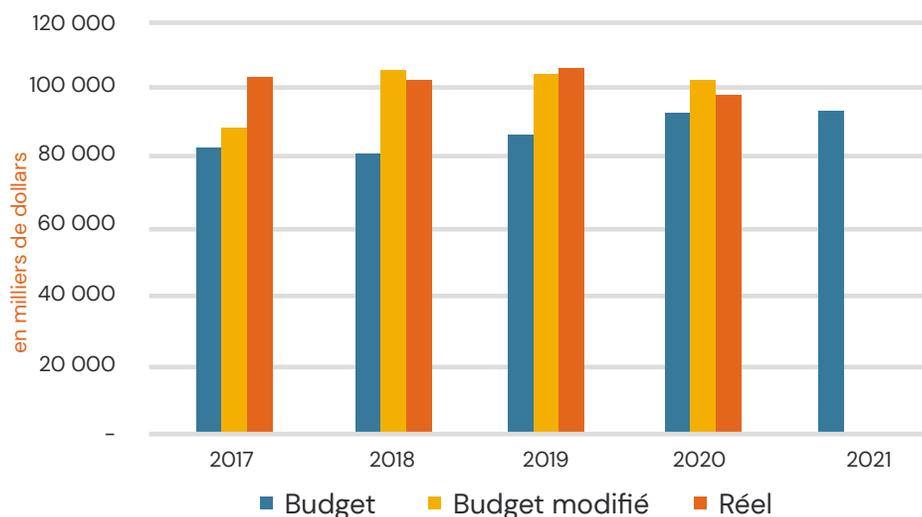
Service de concertation des arrondissements

Le SCA dispose d'un budget de 93 M\$ en 2021 dont 81 M\$ (87%) sont alloués au poste budgétaire des services techniques, constitué principalement des coûts liés aux contrats de déneigement.

Le graphique suivant illustre la comparaison entre le budget accordé, le budget modifié suite à une demande aux instances municipales d'augmenter le budget et les résultats réalisés de 2017 à 2020.

GRAPHIQUE 17

Prévisions et résultats historiques – Service de concertation des arrondissements (total des dépenses)



Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières annuelles de la Ville.

On constate que le budget d'origine ne reflète pas la situation financière réelle du SCA et le niveau d'activité et de service attendu par les élus et les citoyens pour le déneigement. Le SCA doit demander annuellement un renflouement de son budget via la réserve de déneigement, ce qui lui est accordé chaque fois par les instances. En plus d'augmenter la bureaucratie pour un événement qui est déjà prévisible, cela peut malheureusement avoir pour effet de déresponsabiliser et de démotiver les gestionnaires, puisqu'ils savent dès le départ que leur budget est insuffisant.

En conclusion, les résultats de l'audit des trois services sélectionnés démontrent qu'il est impératif de revoir le processus d'attribution des enveloppes budgétaires, ces derniers n'étant pas répartis en fonction d'un niveau de service attendu, mais en fonction du budget de l'année précédente sans égard aux résultats réels.

Les coupures exercées globalement et la non-considération des résultats réels rendent l'imputabilité des directeurs de service difficile, voire même impossible. De plus, l'insuffisance des crédits attribués à certains services force l'Administration municipale à effectuer une gestion parallèle des écarts anticipés dès le début de l'exercice financier pour s'assurer que la Ville ne soit pas en déficit à la fin de l'année.

3.2.1.A. Recommandation

Nous recommandons au Service des finances d'améliorer le processus d'information et de diffusion des instructions afin que les parties prenantes soient saisies des orientations, des directives, notamment des politiques en vigueur, ainsi que la description des rôles et des responsabilités de chacun des intervenants.

3.2.1.B. Recommandation

Nous recommandons au Service des finances de mettre en place, des critères de documentation jugés adéquats comme préconisés dans la *Politique de l'équilibre budgétaire*, un processus de validation et d'approbation assurant la qualité de l'information, ainsi que le respect des orientations et directives par les unités d'affaires.

3.2.1.C. Recommandation

Nous recommandons à la Direction générale, de revoir le processus budgétaire afin de:

- respecter sa *Politique de l'équilibre budgétaire* dont notamment à l'effet que les budgets soient fondés sur des prévisions de revenus et de dépenses réalistes et prudentes et que les budgets octroyés aux services permettent aux gestionnaires de respecter l'équilibre budgétaire et ainsi favoriser leur imputabilité;
- mettre en place des plans de redressement dans le cas où les budgets n'atteignent pas les prévisions;
- mettre en place un système budgétaire et financier permettant de budgéter en fonction du niveau de services ou des activités attendus, ainsi que des plans opérationnels clairement définis permettant ainsi le suivi des indicateurs de mesure à l'atteinte des résultats.

3.2.2. Confection des budgets des arrondissements

Les arrondissements reçoivent des instructions du SF pour la confection de leur budget de fonctionnement. Pour le budget 2021, celles-ci étaient présentées dans le Guide technique de préparation transmis par la Direction du budget. On y trouve, entre autres, les orientations particulières, les paramètres budgétaires, la liste des annexes à compléter et l'échéancier des étapes importantes du processus budgétaire.

Chaque arrondissement dispose de son propre processus. Les étapes importantes sont définies dans un document ou un calendrier, approuvé par le directeur d'arrondissement, comportant notamment les activités suivantes :

- La mise à jour des fichiers de travail;
- Des rencontres pour obtenir les orientations des élus;
- L'envoi d'instructions et de directives aux directions;
- Des rencontres avec les gestionnaires des directions;
- La préparation du budget par les directions;
- La compilation des données et des demandes;
- L'analyse des demandes et la présentation aux élus;
- La transmission des prévisions préliminaires;
- La préparation du document budgétaire public;
- L'approbation du budget par le CA.

La rémunération et les cotisations de l'employeur représentent la grande part des dépenses des arrondissements, soit 71%, 67,7% et 57,6% pour les 3 arrondissements audités. Les prévisions de dépenses à cet égard sont établies à l'aide des taux par poste calculés par le SF et de l'effectif prévu selon les décisions prises par les arrondissements (p. ex. la création, l'abolition, le transfert de postes). Les renseignements fournis dans le cadre de la mise à jour du registre de postes sous la responsabilité du SRH sont également considérés. La rémunération liée aux postes vacants fait l'objet d'un crédit spécifique au budget et les économies prévues à cet égard doivent être reflétées, de même que des économies liées à des postes spécifiques ou d'autres économies relatives à la rémunération.

Les autres dépenses sont principalement constituées de services professionnels (p. ex. des spécialistes, des techniciens et autres), de frais de location, d'entretien et de réparation, de biens non durables et de contributions versées à des organismes. Elles font l'objet d'une révision par les gestionnaires des directions et des divisions de l'arrondissement afin de déterminer si des écarts à la hausse ou à la baisse doivent être considérés par rapport au budget précédent.

Les arrondissements effectuent également la planification d'activités qui relèvent des services centraux, par exemple des activités liées à la gestion de l'eau. Cette planification permet d'évaluer les budgets requis et doit être basée sur l'historique des activités réalisées et sur les besoins anticipés. Les besoins budgétaires doivent

être en équilibre avec l'enveloppe budgétaire de l'année précédente, indexée de 1% en 2021, ou inférieure à celle-ci. Aussi, certaines activités relevant du CG ou du CM peuvent être déléguées ou subdéléguées aux arrondissements par voie de règlement. Les budgets qui y sont associés, indexés aussi de 1% en 2021, sont intégrés aux budgets des arrondissements qui doivent tenir une comptabilité distincte à cet égard. Ces activités déléguées concernent :

- l'entretien des réseaux d'aqueduc et d'égout;
- l'enlèvement et le transport des matières résiduelles (p. ex. le suivi des opérations des contrats, la gestion des plaintes, les communications locales, la gestion des travaux en régie);
- le déneigement¹³;
- les dépenses relatives au parc du Mont-Royal et les autres grands parcs relevant du CM.

Afin d'atteindre l'équilibre budgétaire, différents scénarios et hypothèses sont élaborés pour déterminer les prévisions de dépenses et de revenus. Par exemple, des pourcentages d'indexation sont utilisés pour les prévisions de taxes et de revenus locaux ainsi que pour les autres familles de dépenses. Outre les transferts centraux, les principales sources de revenus des arrondissements proviennent des taxes locales et de la tarification relative aux services. Une taxe spéciale sur les enseignes publicitaires peut aussi être perçue par les arrondissements. Des sommes provenant des excédents accumulés peuvent également servir à équilibrer le budget.

En plus des prévisions de revenus et de dépenses transmises au SF, les arrondissements consignent l'information additionnelle demandée par ce dernier dans des annexes. Pour le budget de fonctionnement 2021, ces annexes portaient notamment sur les écarts entre le budget de dépenses 2020 et le budget proposé pour 2021, les écarts concernant les prévisions de revenus et l'explication des écarts.

D'autres annexes complémentaires accompagnent le budget des arrondissements (p. ex. les enveloppes budgétaires destinées aux arrondissements pour le Fonds de l'eau et les activités associées aux matières résiduelles) ou peuvent être requises selon les particularités de ceux-ci (p. ex. la prévision budgétaire de la taxe spéciale sur les enseignes publicitaires).

Nous avons observé que les processus appuyant la confection des budgets de fonctionnement des trois arrondissements audités sont structurés. Selon ces arrondissements, les rôles et les responsabilités sont clairs, de même que ceux des autres parties prenantes de la Ville. Il en est de même des instructions budgétaires qui leur sont transmises. Cependant, des personnes rencontrées n'étaient pas au fait des politiques financières de la Ville ce qui pourrait compromettre l'efficacité du processus.

¹³ L'activité « Élimination de la neige » est gérée de manière intégrée à la Ville, par le SCA, mais l'opération des sites est déléguée aux arrondissements.

En matière de contrôle, des mesures sont prévues dans les instructions budgétaires pour faire la validation de l'intégrité des données saisies au système budgétaire centralisé. Des rapports sont prévus à cet effet et doivent être utilisés par les arrondissements. Nous avons observé que ces derniers valident que la saisie des données dans l'application SBA est fidèle à leur budget. Nous nous sommes également assurés que le document budgétaire présenté par la Ville reflète bien le budget élaboré par les arrondissements audités; des écarts minimes ont été observés et ceux-ci concernaient seulement la répartition entre deux catégories de revenus.

Les orientations et les priorités de la ville-centre sont prises en considération par les arrondissements lors de la confection du budget, bien qu'ils aient l'autonomie pour faire leurs propres choix budgétaires. Les représentants des arrondissements audités que nous avons rencontrés ont mentionné avoir été informés de l'alignement stratégique communiqué par la Direction générale à la fin de 2019 et avoir participé à la démarche visant l'élaboration du plan stratégique *Montréal 2030*. Les orientations et les priorités contenues dans ce plan, de même que la vision de la Ville, étaient donc en toile de fond de la confection de leur budget pour l'année 2021. Cependant, comme il est mentionné dans les paragraphes suivants, des améliorations doivent être apportées au processus budgétaire des arrondissements audités.

Il n'y a pas de mécanisme formel pour documenter les orientations et les priorités de la ville-centre, de même que celles des élus de l'arrondissement, et pour s'assurer qu'elles sont reflétées dans le budget de fonctionnement. Il en est de même des décisions stratégiques prises par la direction d'arrondissement et les élus. Celles-ci se retrouvent dans des documents de présentation utilisés lors de rencontres ou dans les fichiers utilisés pour la confection du budget, mais elles ne sont pas consignées dans des comptes-rendus approuvés formellement. De plus, les contrôles effectués pour s'assurer que le budget reflète les décisions prises et les instructions reçues ne sont pas documentés.

Aussi, le processus budgétaire n'est pas documenté formellement. Des façons de faire ont été établies ainsi que des calendriers contenant les principales étapes et l'échéancier à respecter afin de se conformer aux délais déterminés par le SF. À cet égard, les arrondissements considèrent que la période de temps dont ils disposent pour préparer leur budget est trop courte. Dans ce contexte et considérant le fait que les travaux se déroulent pendant la période des vacances estivales, ils doivent déterminer des hypothèses et commencer la préparation du budget avant la confirmation du montant de leurs transferts et la réception des orientations et des instructions budgétaires, ce qui ne favorise pas l'efficacité du processus.

Les trois arrondissements audités prennent en considération les résultats historiques pour établir leurs prévisions, mais comme dans le cas du cadre financier et des prévisions de la ville-centre, le budget est établi sur la base d'écart entre ce dernier et celui de l'année précédente. Ce mode de fonctionnement laisse peu de marge de manœuvre aux arrondissements pour prendre en compte les résultats réels et les événements prévisibles et pour déterminer des hypothèses basées sur ceux-ci. D'ailleurs, les arrondissements n'ont pas à fournir des informations

concernant leurs hypothèses alors que, selon les bonnes pratiques, les responsables du budget de la Ville devraient avoir accès à toutes les hypothèses formulées par les gestionnaires afin notamment de veiller à l'uniformité des prévisions et en faire la validation.

Comme il a été mentionné précédemment, il est de plus en plus difficile pour les arrondissements d'équilibrer leur budget de fonctionnement dans le contexte où le montant des transferts centraux n'est pas indexé au même rythme que celui des dépenses. Pour y parvenir, ils doivent augmenter les autres sources de financement, notamment l'utilisation d'excédents accumulés. À ce chapitre, nous avons constaté que des sommes sont distribuées aux arrondissements alors qu'elles n'ont pas été budgétées.

En effet, à la fin de chaque année financière, le SF compile les sommes perçues par la ville-centre aux bénéficiaires des arrondissements afin de les remettre à ces derniers en procédant à des ajustements de l'excédent de gestion de l'exercice financier plutôt que sous forme de revenus. Il s'agit, par exemple, des revenus de permis de construction ou de rénovation qui sont perçus en sus du budget paramétré déterminé lors de la RFA et d'une portion du gain net provenant de la vente de terrains. Aussi, d'autres sommes perçues ou réservées pour des fins spécifiques sont attribuées aux arrondissements à titre d'affectations ou d'ajustements de leur excédent. Parmi ceux-ci, on retrouve le remboursement de dépenses non capitalisables engagées dans le cadre du *Plan d'action canopée* et des sommes relatives à la gestion des matières résiduelles et aux chargements de neige additionnels.

De plus, une réduction de l'excédent de gestion annuel des arrondissements est effectuée depuis 2018 concernant les mesures transitoires relatives aux régimes de retraite, en plus de la réduction récurrente de 4M\$ des transferts centraux depuis 2019.

Le tableau suivant présente les ajustements apportés aux excédents de gestion des arrondissements de 2016 à 2020.

TABLEAU 8

Distribution des surplus de gestion des arrondissements

	2016	2017	2018	2019	2020
	En milliers de dollars				
Surplus de revenus de permis de construction et de modification	9 751,1\$	24 303,9\$	35 478,1\$	25 811,6\$	25 795,6\$
Surplus de revenus d'études de demandes	1 150,8\$	- \$	- \$	- \$	- \$
Remboursement de dépenses relatives au Plan d'action canopée	1 938,7\$	2 297,9\$	2 980,8\$	4 738,7\$	6 268,0\$
Taxe d'arrondissement	2 089,2\$	285,4\$	820,7\$	1 113,7\$	(172,7)\$
Remise de 20 % du gain comptable sur la vente de terrains	489,5\$	4 392,0\$	2 010,5\$	1 805,1\$	5 132,4\$
Imputabilité de la dépense réelle SST	1 085,2\$	(4 320,1)\$	(1 561,2)\$	(1 559,5)\$	3 207,8\$
Remboursement des libérations syndicales	589,8\$	319,6\$	447,3\$	500,3\$	512,0\$
Matières résiduelles	(581,8)\$	739,8\$	1 927,6\$	2 730,2\$	4 492,6\$
Régime de retraite (économies escomptées, non réalisées)	- \$	9 948,0\$	2 927,4\$	- \$	- \$
Mesures transitoires relatives aux régimes de retraite	- \$	- \$	(4 008,4)\$	(4 008,4)\$	(4 008,4)\$
Remboursement des chargements de neige additionnels	- \$	- \$	1 400,3\$	4 449,9\$	326,9\$
Remboursement camps de jour	- \$	- \$	- \$	- \$	3 492,2\$
Subvention pour l'acquisition de livres	1 751,6\$	1 423,2\$	145,0\$	- \$	- \$
Autres ajustements	945,9\$	638,7\$	64,2\$	435,7\$	(1 692,8)\$
Total	19 210,0\$	40 028,4\$	42 632,3\$	36 017,3\$	43 353,5\$

Source: Données compilées par le Bureau du vérificateur général à l'aide des documents fournis par le SF.

Bien que ces ajustements aux excédents soient conformes à la *Politique d'attribution, d'utilisation et de renflouement des surplus de gestion* et qu'ils soient approuvés par les instances, cette façon de faire ne favorise pas la transparence budgétaire et l'allocation optimale des ressources lors de la confection du budget. C'est le cas du budget de revenus, notamment celui relatif aux permis, qui est sous-évalué et intégré à même le montant global des transferts. Comme il a été mentionné précédemment, ces revenus excédentaires ne sont pas présentés non plus dans le budget de revenus de la ville-centre, puisque les prévisions pour les revenus de permis n'ont pas été ajustées depuis 2014. De plus, il découle de cette façon de faire des sous-évaluations systématiques du budget des arrondissements et des modifications à celui-ci en cours d'année.

Par ailleurs, les dépenses de fonctionnement financées avec les excédents accumulés ont augmenté, puisque les affectations de surplus des arrondissements étaient de 24,2 M\$ en 2016 et de 54,3 M\$ en 2020, soit une croissance de 124,2%. Ces affectations représentaient environ 6,2% des dépenses réelles en 2020 (2,5% en 2016) alors que le budget en prévoyait seulement 2,4%. Nous avons observé que des dépenses récurrentes sont financées avec ces affectations, par exemple, la reconduction de postes temporaires, ce qui diffère des pratiques de gestion énoncées à l'égard du CM et du CG¹⁴.

Ces ajustements font également en sorte que les excédents accumulés des arrondissements augmentent d'année en année. Leur croissance fut de 24% entre 2016 et 2020, soit de 190,5 M\$ à 236,5 M\$, et est variable d'un arrondissement à l'autre puisqu'elle fut de 27% dans le cas de l'arrondissement de Mercier-Hochelaga-Maisonneuve et de 69% pour l'arrondissement de Saint-Laurent.

Notons que ces excédents contiennent des montants affectés pour imprévus¹⁵ en plus des réserves pour contingences prévues dans le budget de fonctionnement de certains arrondissements et que ni l'un ni l'autre ne sont présentés dans le budget ou les redditions de comptes financières annuelles. De plus, les excédents accumulés des arrondissements ne sont pas divulgués distinctement dans les états financiers annuels.

Les tableaux et les graphiques suivants présentent les écarts entre les affectations de surplus prévues au budget et celles réellement effectuées, de même que les excédents accumulés des arrondissements des cinq dernières années.

¹⁴ La *Politique de gestion des excédents de fonctionnement (surplus affectés et non affectés)* mentionne que les surplus non affectés du CM et du CG devraient servir à financer des dépenses non récurrentes ou encore à effectuer des dépenses à leur discrétion.

¹⁵ La *Politique d'attribution, d'utilisation et de renflouement des surplus de gestion* dégagés de l'exercice financier 2019 de la Ville propose que les sommes provenant du surplus soient notamment affectées au comblement de la réserve pour imprévus, jusqu'à concurrence de 1,5% du budget annuel de l'arrondissement, avant que tout solde du surplus de gestion soit considéré comme un surplus libre.

TABEAU 9

Excédents accumulés et affectations des arrondissements au cours des cinq dernières années

	2016	2017	2018	2019	2020
En milliers de dollars					
19 arrondissements					
Affectations au budget initial	9 291,8\$	10 541,1\$	13 732,1\$	20 701,0\$	21 129,8\$
Affectations réelles	24 216,4\$	31 479,9\$	35 274,4\$	46 926,0\$	54 304,8\$
Écart	14 924,6\$	20 938,8\$	21 542,3\$	26 225,0\$	33 175,0\$
Excédents accumulés	190 489,0\$	192 253,2\$	205 253,0\$	226 117,3\$	236 405,2\$
Arrondissement de Mercier–Hochelaga–Maisonneuve					
Affectations au budget initial	296,0\$	-\$	-\$	-\$	369,4\$
Affectations réelles	2 042,0\$	2 623,1\$	2 167,8\$	1 946,1\$	3 130,0\$
Écart	1 746,0\$	2 623,1\$	2 167,8\$	1 946,1\$	2 760,6\$
Excédents accumulés	8 745,5\$	8 391,4\$	9 506,0\$	11 790,1\$	11 107,5\$
Arrondissement de Saint-Laurent					
Affectations au budget initial	850,1\$	921,3\$	-\$	-\$	382,8\$
Affectations réelles	(196,4)\$	747,5\$	(416,5)\$	(387,2)\$	40,6\$
Écart	(1 046,5)\$	(173,8)\$	(416,5)\$	(387,2)\$	(342,2)\$
Excédents accumulés¹⁶	12 957,1\$	10 234,4\$	17 021,0\$	27 291,8\$	31 755,9\$

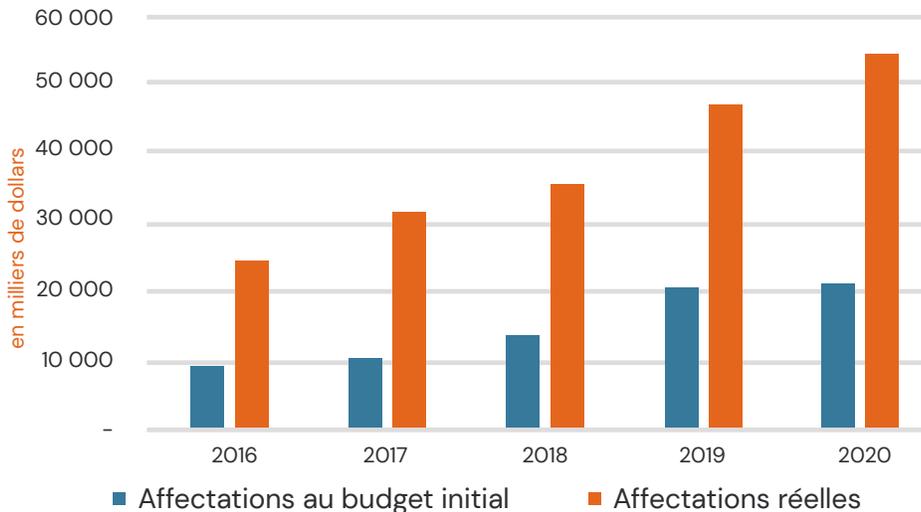
¹⁶ Les excédents accumulés de cet arrondissement incluent des montants transférés par la ville-centre après 2017, totalisant 9,9M\$, qui sont destinés à des fins particulières. Ils ont été exclus pour déterminer le pourcentage d'augmentation des excédents accumulés de l'arrondissement entre 2016 et 2020.

	2016	2017	2018	2019	2020
En milliers de dollars					
Arrondissement de Ville-Marie					
Affectations au budget initial	910,5\$	909,1\$	3 281,2\$	8 450,7\$	9 016,2\$
Affectations réelles	6 532,1\$	7 260,3\$	10 886,3\$	13 612,3\$	15 339,3\$
Écart	5 621,6\$	6 351,2\$	7 605,1\$	5 161,6\$	6 323,1\$
Excédents accumulés	32 618,5\$	32 924,1\$	38 020,0\$	47 439,2\$	45 974,7\$

Source: Données compilées par le Bureau du vérificateur général à l'aide des documents budgétaires, des redditions de comptes financières annuelles et des systèmes d'information de la Ville.

GRAPHIQUE 18

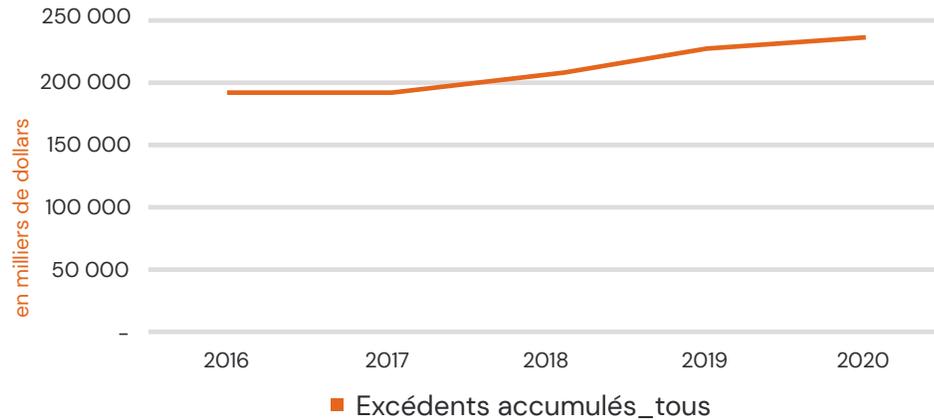
Prévisions et résultats historiques – Évolution de l'utilisation des affectations – 19 arrondissements



Source: Données du tableau 9.

GRAPHIQUE 19

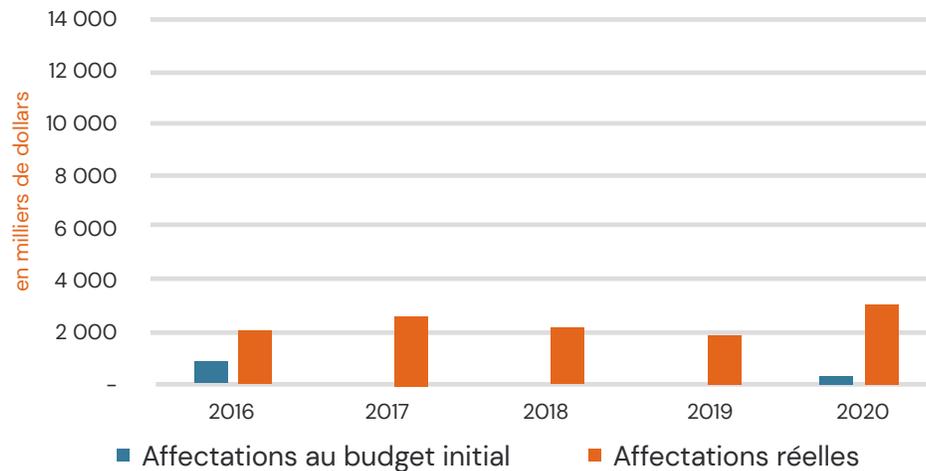
Évolution de l'excédent accumulé – 19 arrondissements



Source: Données du tableau 9.

GRAPHIQUE 20

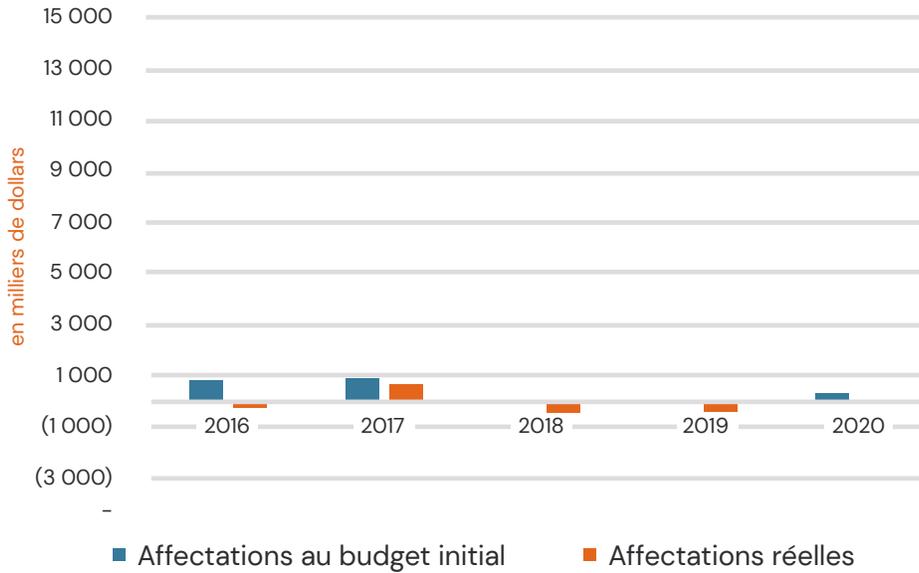
Prévisions et résultats historiques – Évolution de l'utilisation des affectations – arrondissement de Mercier-Hochelaga-Maisonneuve



Source: Données du tableau 9.

GRAPHIQUE 21

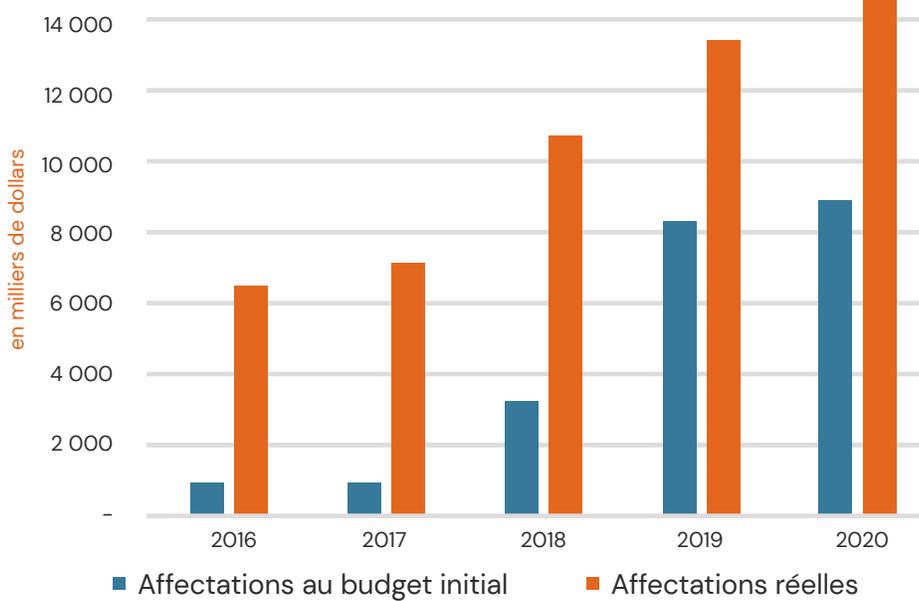
Prévisions et résultats historiques – Évolution de l'utilisation des affectations – arrondissement de Saint-Laurent



Source: Données du tableau 9.

GRAPHIQUE 22

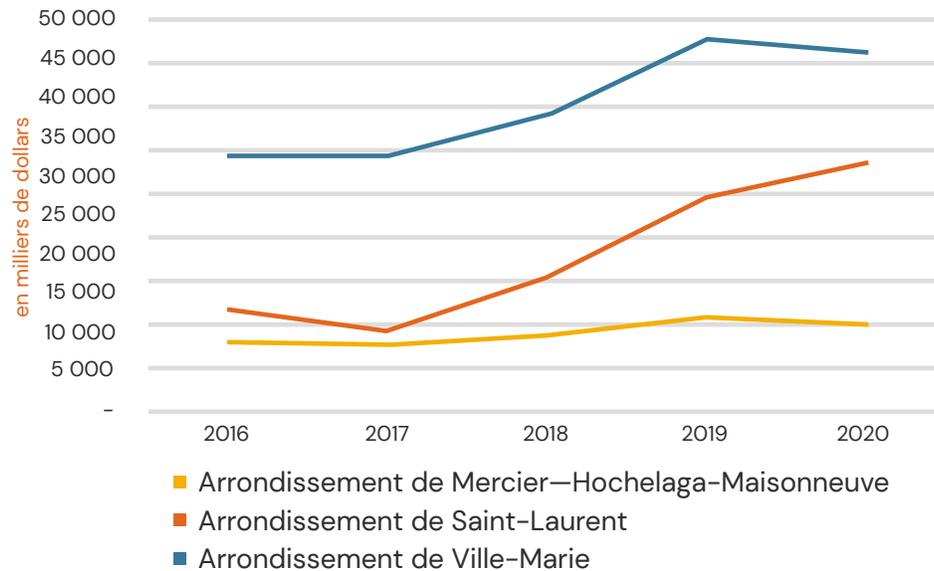
Prévisions et résultats historiques – Évolution de l'utilisation des affectations – arrondissement de Ville-Marie



Source: Données du tableau 9.

GRAPHIQUE 23

Évolution des excédents accumulés des trois arrondissements combinés



Source: Données du tableau 9.

N. B. Les excédents accumulés de l'arrondissement de Saint-Laurent incluent des montants transférés par la ville-centre après 2017, totalisant 9,9M\$, qui sont destinés à des fins particulières.

Ces données démontrent que les prévisions reflètent de moins en moins la réalité et que les arrondissements comptent sur leurs surplus pour rendre des services, alors que cela n'est pas représenté dans leur budget. Elles démontrent également que les façons de faire diffèrent d'un arrondissement à l'autre. Des changements doivent donc être apportés à la méthode d'établissement des prévisions budgétaires des arrondissements afin de les uniformiser et d'en améliorer la rigueur. Les instances et les citoyens seront alors mieux informés des sources de financement et des dépenses prévues pour les activités à venir et les services à rendre au cours de la prochaine année.

3.2.2.A. Recommandation

Nous recommandons à la Direction général, en collaboration avec le Service des finances, de s'assurer que les revenus et les dépenses prévisibles contenus dans l'ajustement des surplus de gestions aux arrondissements soient inclus au budget en tenant compte des résultats historiques plutôt que d'être ajoutés aux excédents de fonctionnement accumulés en fin d'année.

3.2.2.B. Recommandation

Nous recommandons au Service des finances d'inclure dans ses politiques des mesures afin d'harmoniser les prévisions et les imputations budgétaires des arrondissements, notamment celles relatives à l'affectation des excédents accumulés.

3.2.2.C. Recommandation

Nous recommandons aux arrondissements de Mercier–Hochelaga–Maisonneuve et de Saint-Laurent de prévoir au budget l'ensemble des dépenses de fonctionnement prévues au cours de la prochaine année ainsi que les affectations de surplus nécessaires pour les financer.

3.2.2.D. Recommandation

Nous recommandons aux arrondissements de Mercier–Hochelaga–Maisonneuve, de Saint-Laurent et de Ville-Marie, d'améliorer la documentation de leur processus budgétaire, notamment en ce qui concerne la prise en compte des priorités de la Ville de Montréal, les orientations et les stratégies de l'arrondissement, la description des étapes importantes du processus et les contrôles effectués pour s'assurer que le budget reflète les décisions et les instructions reçues.

3.3. Consolidation des budgets et arbitrage

Comme décrit précédemment, la Direction du budget s'assure que le total du budget de chaque service et de chacun des arrondissements est équilibré. Si ce n'est pas le cas, l'unité d'affaires doit le rééquilibrer selon les instructions reçues.

Au début septembre, une nouvelle version du cadre financier est mise à jour pour y consigner les montants des budgets des unités d'affaires ainsi que les nouvelles informations reçues au cours de la période estivale. C'est l'étape de la consolidation.

Pour la préparation des budgets 2020 et 2021, l'Administration municipale avait exclu toute demande additionnelle de la part des unités d'affaires et éliminé le processus habituel mis en place pour les traiter. Toutefois, des demandes considérées comme des « enjeux » ont tout de même été soumises et l'Administration municipale a accepté de les analyser. Les services ont été invités à préparer un « *business case* » afin de présenter ces demandes.

La plupart des directeurs de service ont rencontré le comité de budget administratif pour exposer et justifier leurs enjeux. À la suite de ces rencontres, le comité de budget administratif a procédé à leur arbitrage et a préparé ses recommandations d'acceptation ou de rejet qu'il a soumises au comité de budget politique.

Une fois la décision rendue par le comité de budget politique, la Direction du budget prépare des enveloppes budgétaires amendées pour les unités d'affaires qui se sont vu octroyer partiellement ou complètement les sommes additionnelles liées à leurs enjeux. Les unités d'affaires concernées sont alors avisées du changement à refléter adéquatement au système budgétaire.

Étant donné qu'il existait encore un déséquilibre à cette étape, le comité de budget administratif a également préparé de nouveaux scénarios de coupures à soumettre au comité de budget politique. Ce processus itératif peut se produire à quelques reprises au courant des mois de septembre et octobre. Le comité de budget administratif et le comité de budget politique analysent les nouvelles informations et procèdent à l'arbitrage final afin d'atteindre un budget équilibré pour le prochain exercice. C'est toujours à l'aide du fichier du cadre financier que le suivi du budget est effectué jusqu'à la fin du processus.

Selon nos observations et nos discussions avec les responsables, il n'existe pas de critères officiels de priorisation pour appuyer le processus décisionnel pour l'acceptation des nouvelles demandes budgétaires ou pour procéder à des coupures du budget de fonctionnement. Normalement, lors des arbitrages budgétaires, les demandes devraient être jugées d'abord à partir des priorités de la Ville, à savoir si la demande s'inscrit directement en rapport avec ces priorités et si son impact budgétaire ne crée pas un grand déséquilibre. Ensuite, les demandes qui permettent d'améliorer la productivité et de réaliser des économies à court ou moyen terme devraient aussi être acceptables.

Nous avons constaté que les décisions prises lors de l'arbitrage final pour déterminer les budgets des unités d'affaires ne sont pas documentées adéquatement. Un tableau de suivi des enjeux est complété, cependant, il ne contient pas les justifications d'approbation ou de refus de ces dernières. Comme nous l'avions mentionné dans la section portant sur les orientations, il n'existe pas de comptes-rendus approuvés formellement du comité de budget administratif et du comité de budget politique.

Peu importe la terminologie utilisée pour désigner les demandes additionnelles ou les enjeux, elles doivent être soutenues par un processus qui minimise le risque d'erreurs et d'omissions, et qui présente les bons coûts aux décideurs pour qu'ils puissent prendre une décision éclairée. Or, il n'y a pas de mécanisme permettant de faire le suivi des modifications apportées au cadre financier et de le réviser.

Tout au long du processus budgétaire, l'Administration municipale concentre ses efforts sur la gestion de la marge de manœuvre financière afin que le budget soit équilibré. Rappelons ici que la marge de manœuvre ou le déséquilibre financier représente l'écart entre l'augmentation prévue des revenus par rapport à l'augmentation prévue des dépenses. Depuis plusieurs années, l'Administration municipale doit composer avec un manque à gagner. C'est en fonction de ce dernier que les orientations budgétaires et les directives sont édictées. Par souci d'équité et par commodité, on impose généralement les mêmes directives et contraintes budgétaires à l'ensemble des unités d'affaires.

Alors que l'Administration municipale gère le processus globalement en fonction de l'évolution du manque à gagner, les unités d'affaires doivent appliquer ces directives et ces contraintes budgétaires aux activités et aux services qu'elles dispensent à la population. Étant donné que depuis plusieurs années des restrictions et des contraintes budgétaires leur sont imposées, sans pour autant diminuer le niveau de service ou la quantité et la qualité de leurs opérations, certaines d'entre elles peinent à répondre aux objectifs et présentent des déficits d'opération.

L'Administration municipale utilise une approche traditionnelle dans la gestion de son processus budgétaire. Elle gère le montant des budgets alloués et non le niveau de service requis ou la qualité et la quantité d'activités à réaliser. Bien que le Service de la performance organisationnelle ait été créé et « *travaille à accompagner l'Administration municipale dans la détermination de pistes d'amélioration afin de générer des économies, tant monétaires que de temps, et émettre des recommandations sur les meilleures façons de faire en matière de performance organisationnelle*¹⁷ », cette démarche n'est pas étendue à toutes les unités d'affaires et n'est pas intégrée au processus budgétaire.

3.3.A. Recommandation

Nous recommandons à la Direction générale de déterminer des critères pour évaluer et prioriser les demandes additionnelles, afin de prendre des décisions éclairées, et de documenter cette évaluation.

3.4. Approbation du budget par les instances

C'est au cours du mois d'octobre que les budgets des arrondissements sont présentés à leurs CA et soumis par ces derniers au CE.

Pour ce qui est du budget global de la Ville, c'est au cours des mois de novembre et décembre qu'il est soumis au CE, étudié par la CFA et finalement adopté par le CM et le CG.

À cet égard, le CM et le CG mandatent la CFA pour étudier le budget (volets « ville-centre » et « agglomération ») afin d'éclairer leur prise de décision. Faisant suite à son étude, la CFA recommande l'adoption ou non du budget incluant des recommandations spécifiques.

¹⁷ Site Internet de la Ville, Service de la performance organisationnelle, 8 mars 2021.

Plusieurs présentations sont faites devant la CFA, notamment une présentation du budget global par le SF et des présentations pour le budget de chaque service. Un modèle a été développé pour uniformiser le contenu de ces présentations. Concernant le budget de fonctionnement, on y retrouve entre autres les objectifs et les réalisations de l'année en cours, l'évolution budgétaire de celle-ci, des indicateurs, les objectifs de la prochaine année ainsi que des données relatives au budget soumis, soit:

- le budget des revenus et des dépenses, par compétences, et les principaux écarts comparativement au budget précédent;
- le budget des revenus et des dépenses par objets, l'explication des principaux écarts entre le budget présenté et celui de l'année précédente;
- les dépenses par catégories d'emploi et les variations des effectifs.

Nous avons constaté que les données présentées concernant les revenus et les dépenses par objets incluaient les résultats réels des dernières années sans toutefois présenter le budget correspondant. On y retrouve le budget de l'année en cours et les projections de revenus et de dépenses correspondantes, ce qui ne permet pas de connaître les écarts budgétaires antérieurs et leur tendance. Certaines données et tendances sont parfois présentées concernant des dépenses spécifiques, mais elles ne couvrent pas l'ensemble du budget. L'évaluation par la CFA de la capacité des services à réaliser les enveloppes budgétaires accordées s'avère difficile.

Nous présentons ci-après, un exemple de données présentées à la CFA pour l'étude du budget 2021 d'un service. Il est suivi d'un tableau et d'un graphique démontrant les écarts qui pourraient être observés si ces données étaient accompagnées du budget des années précédentes, soit que le budget est constamment sous-évalué.

TABLEAU 10

Présentation du budget 2021 – Revenus et dépenses par objets
à la Commission des finances et de l'administration

Revenus par objets (en milliers de dollars)						
	Réel comparatif 2016	Réel comparatif 2017	Réel comparatif 2018	Réel comparatif 2019	Prévision comparative 2020	Budget 2021
Autres services rendus	38 582,0	34 263,7	39 715,1	43 531,4	34 635,9	37 390,8
Autres revenus	3 128,9	3 517,2	4 430,8	2 004,5	1 178,9	3 894,9
Transferts	8 633,5	9 504,6	8 126,0	14 277,0	16 194,8	14 487,5
Total	50 344,4	47 275,5	52 271,9	59 812,9	52 009,6	55 773,2
Dépenses par objets (en milliers de dollars)						
	Réel comparatif 2016	Réel comparatif 2017	Réel comparatif 2018	Réel comparatif 2019	Prévision comparative 2020	Budget 2021
Rémunération et cotisations de l'employeur	610 822,1	645 548,9	645 292,1	657 669,7	662 819,3	636 579,6
Transport et communication	1 546,5	2 483,5	2 055,3	2 233,1	2 356,0	2 901,6
Services professionnels	706,9	841,5	801,7	976,0	1 542,9	1 845,6
Services techniques et autres	4 471,8	3 777,1	3 433,2	4 263,4	4 314,0	4 502,5
Location, entretien et réparation	2 697,4	1 306,7	2 332,0	2 099,8	2 441,0	2 685,3
Biens non durables	6 814,8	7 177,8	7 014,8	6 165,3	6 577,8	9 290,4
Biens durables	3 775,3	1 961,9	1 890,9	1 430,6	2 049,3	1 805,4
Contributions à des organismes	4 200,4	4 258,1	4 161,9	4 647,8	4 850,1	4 850,1
Autres objets	(171,1)	(978,2)	(1,7)	(1 045,7)	-	-
Total	634 864,1	666 377,3	666 980,2	690 440,0	688 950,4	664 460,5
						679 110,2

Source: Présentation à la CFA lors de l'étude publique du budget 2021.

TABLEAU 11**Présentations des écarts des dépenses des budgets comparatifs aux réels du Service selon les redditions de comptes**

Tableau des redditions de comptes (en milliers de dollars)			
Année	Budget	Réel	Écart
2016	680 442 \$	691 020 \$	(10 578) \$
2017	652 076 \$	701 159 \$	(49 083) \$
2018	647 311 \$	683 014 \$	(35 703) \$
2019	662 206 \$	695 509 \$	(33 303) \$
2020	665 264 \$	709 077 \$	(43 813) \$

Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières annuelles de la Ville.

Bien que cette comparaison ne soit pas parfaite en raison des restructurations effectuées au fil du temps et des changements apportés aux responsabilités de certains services, cette information serait plus significative et permettrait de faire une meilleure évaluation des budgets des différents services. Elle permettrait également à la CFA de juger si les budgets sont respectés ou non, d'observer les tendances et de poser des questions à ce sujet.

De plus, bien que les objectifs de la prochaine année soient présentés, aucun lien n'est fait entre ceux-ci et le budget. Il n'est donc pas possible non plus d'évaluer dans quelle mesure le budget favorisera l'atteinte de ces objectifs.

Nous avons aussi constaté que les résultats projetés pour l'année en cours, présentés afin de les comparer au budget de celle-ci, sont sous-évalués. En effet, une analyse des projections contenues dans le budget du service pour les dernières années démontre des écarts, parfois importants.

TABLEAU 12**Analyse des projections**

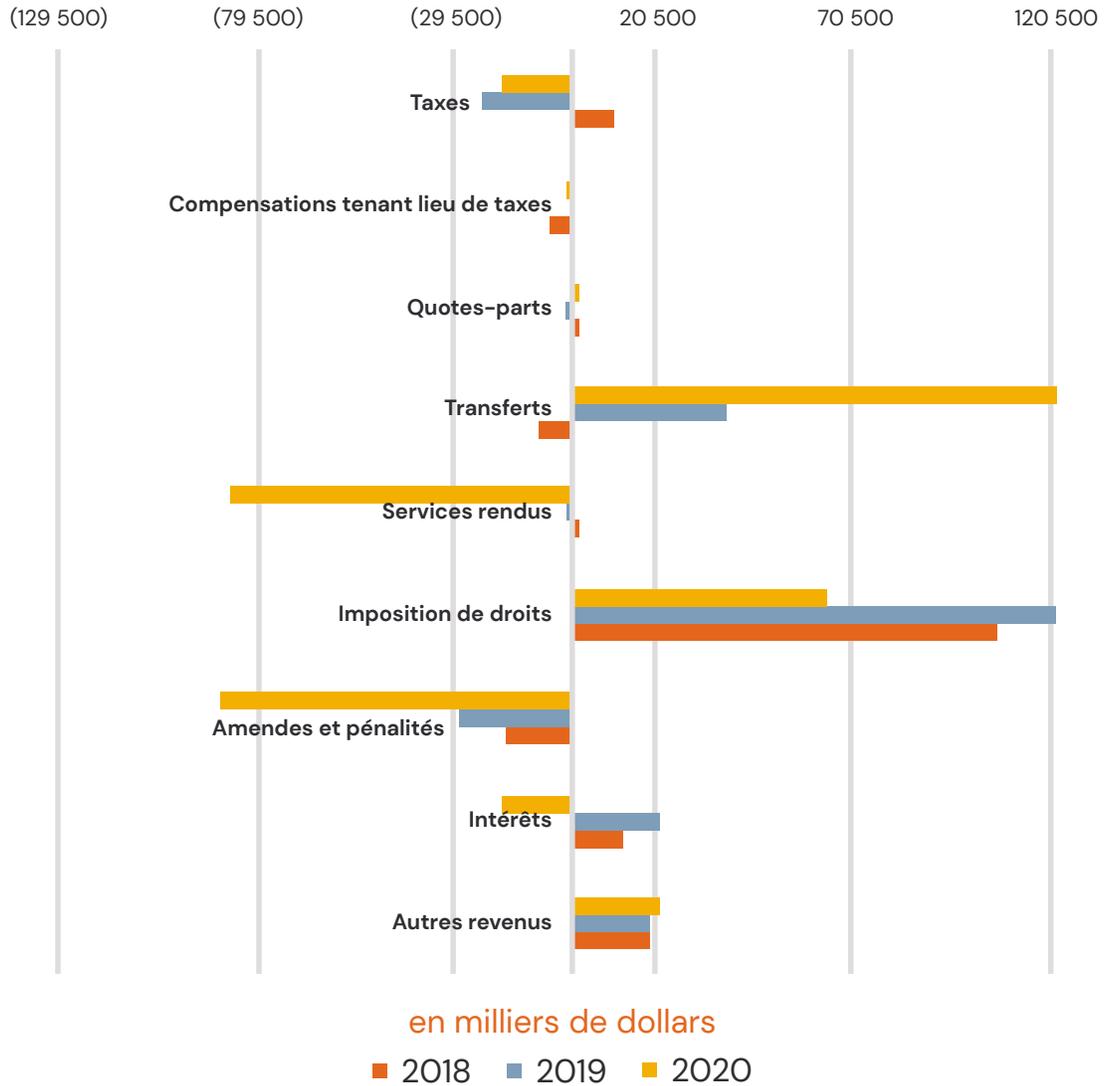
Année	Projections au document budgétaire	Réels à la reddition de comptes	Écart
	En milliers de dollars		
2016	669 000 \$	691 020 \$	(22 020) \$
2017	652 439 \$	701 159 \$	(48 720) \$
2018	659 524 \$	683 015 \$	(23 491) \$
2019	685 456 \$	695 509 \$	(10 053) \$
2020	688 950 \$	708 952 \$	(20 002) \$

Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières annuelles de la Ville.

Par ailleurs, la présentation du budget global ne contient pas de l'information sur les tendances des écarts entre le budget de revenus et de dépenses par objets et les résultats réels ni sur les écarts budgétaires par service. On y présente seulement les écarts entre le budget proposé et celui de l'année précédente. Les tableaux et les graphiques suivants présentent les écarts et les tendances qui pourraient être utiles de connaître lors de l'étude du budget.

GRAPHIQUE 24

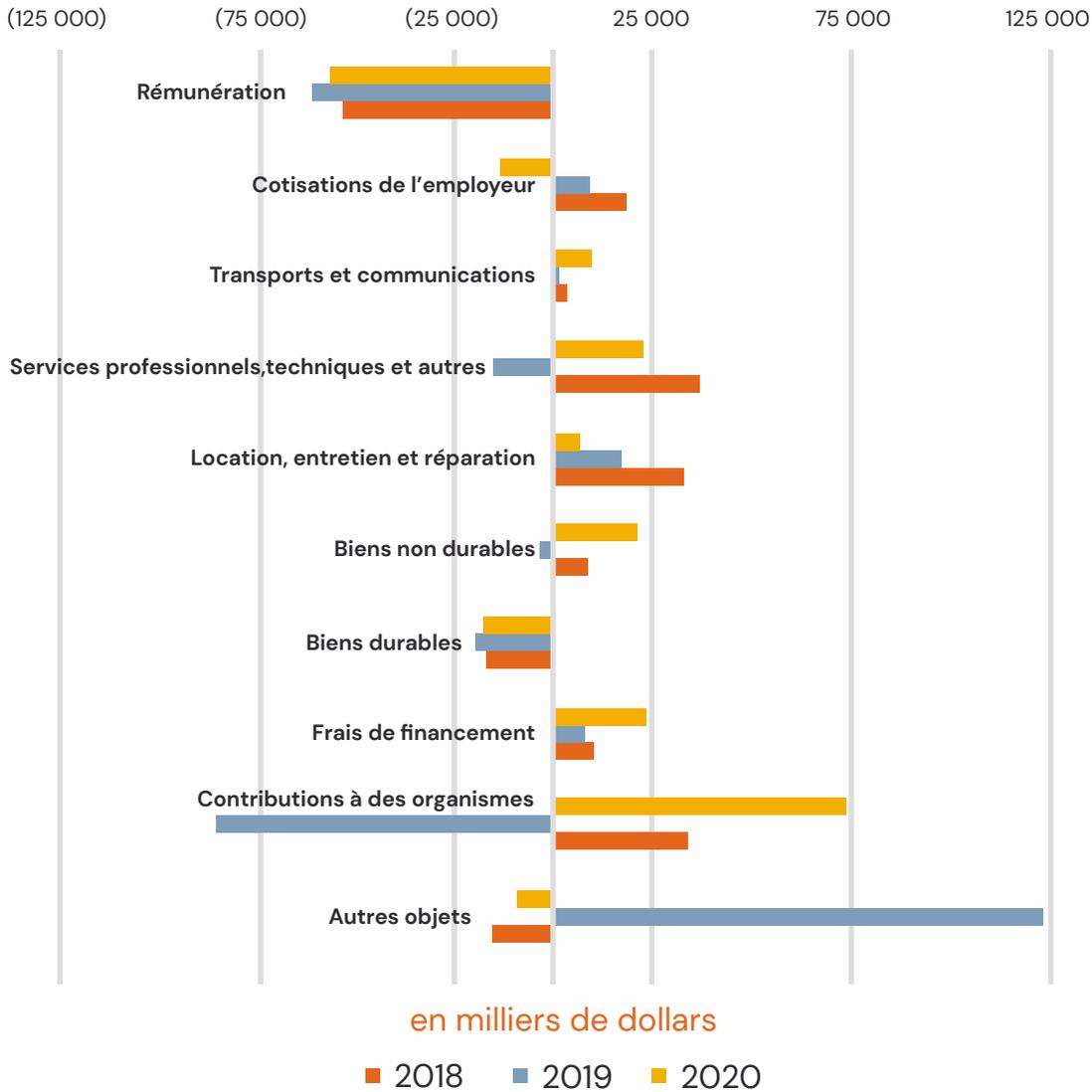
Écart des revenus budget/réel selon les redditions de comptes



Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières annuelles de la Ville.

GRAPHIQUE 25

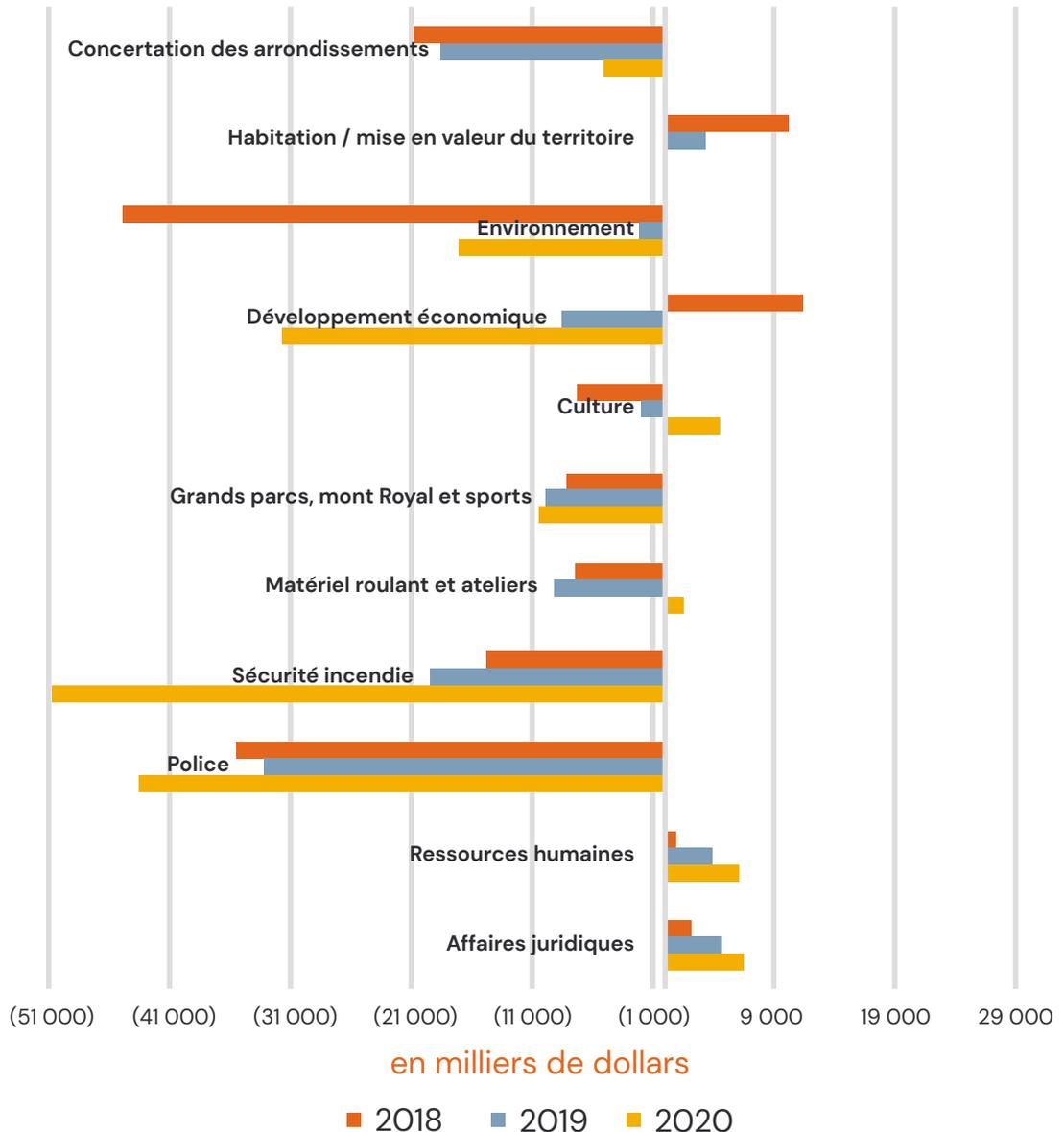
Écart budget/réel des charges de fonctionnement par objets selon les redditions de comptes



Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières annuelles de la Ville.

GRAPHIQUE 26

Écart budget/réel par service selon les redditions de comptes



Source: Données compilées par le Bureau du vérificateur général à l'aide de l'information présentée dans les documents budgétaires annuels et dans les redditions de comptes financières annuelles de la Ville.

N. B. Afin d'alléger la présentation, seuls les services ayant des écarts dans le même sens pendant les trois années et les services avec des écarts significatifs sont présentés à titre d'exemple.

Actuellement, aucun document ne permet d'évaluer la performance budgétaire de la Ville. Une reddition de comptes est faite annuellement pour présenter les résultats de chaque exercice financier, comparativement au budget, mais l'information est insuffisante pour faire cette évaluation puisqu'elle porte sur une année seulement.

Nous sommes d'avis que la présentation des données budgétaires passées en comparaison des résultats réels permettrait à la CFA d'avoir un portrait plus juste de la situation, d'en connaître les tendances et ainsi d'apprécier de manière plus complète les prévisions présentées au budget.

La CFA a d'ailleurs recommandé à l'Administration municipale d'expliquer certaines projections budgétaires qui révélaient un écart significatif entre les résultats prévus pour 2020 et les prévisions pour 2021, afin d'assurer la capacité de la Ville d'atteindre l'équilibre budgétaire dans le contexte où une vigilance particulière s'impose considérant l'instabilité liée à la pandémie.

Nous avons finalement constaté, en ce qui concerne les budgets des arrondissements audités, que les documents publiés lors de leurs présentations par aux CA contenaient une information insuffisante et très sommaire dans certains cas. Elles fournissent notamment peu de données comparatives quant au budget et aux dépenses réelles des années précédentes. Aussi, le fait que les prévisions de dépenses sont présentées par activités seulement dans le cas des arrondissements de Mercier–Hochelaga–Maisonneuve et de Saint-Laurent, alors que le budget global de la Ville les présente par objet, fait en sorte que les instances et les citoyens peuvent difficilement faire le lien entre ces deux types d'information afin d'apprécier le budget de même que la nature et l'évolution des dépenses.

3.4.A. Recommandation

Nous recommandons au Service des finances de valider auprès de la Commission sur les finances et l'administration, si cette dernière désire disposer d'une information en regard des résultats passés et des tendances pour qu'ainsi la performance budgétaire puisse être évaluée lors de l'étude du budget avant d'en recommander l'adoption au conseil municipal et au conseil d'agglomération.

3.4.B. Recommandation

Nous recommandons aux arrondissements de Mercier–Hochelaga–Maisonneuve et de Saint-Laurent de revoir le contenu des documents budgétaires présentés à leur conseil d'arrondissement afin que ce dernier et les citoyens disposent d'une information pertinente et complète sur le budget leur permettant d'évaluer ce dernier au regard des résultats financiers historiques et de l'information présentée dans le document *Montréal – Budget 2021 – PDI 2021–2030* de la Ville de Montréal.

3.4.C. Recommandation

Nous recommandons à l'arrondissement de Ville-Marie de bonifier le contenu des documents budgétaires présentés au conseil d'arrondissement lors de la séance extraordinaire afin que ce dernier puisse être évalué au regard des résultats financiers historiques.

3.5. Outils et ressources impliqués dans la confection du budget

3.5.1. Systèmes et outils utilisés pour la confection du budget

Le SBA est la principale application utilisée pour la confection du budget de fonctionnement de la Ville. Cette application ainsi que la plupart des autres systèmes utilisés dans le cadre du processus budgétaire ont été implantés dans les années 1990 et 2000 et ne sont plus supportés par les fournisseurs. Ces systèmes mis en place bien avant les fusions, les défusions et la création de l'agglomération ont été rafistolés par le SF et le Service des technologies de l'information (STI) afin d'être en mesure de produire des budgets. Lorsque cela était impossible, les utilisateurs du SF ont créé des applications parallèles gérées sur des fichiers Excel ou Access, des passerelles et divers outils afin de remplir leurs obligations. De leur côté, les différentes unités d'affaires en ont fait de même, accroissant ainsi les risques d'erreurs et nécessitant des contrôles compensatoires pour les atténuer.

En 2009, une étude réalisée par une firme de consultants faisait déjà état de l'urgence de remplacer les systèmes considérant leur état de désuétude et de leur inefficacité à livrer une information pertinente, en temps voulu, et exempt de risques d'erreurs. À la suite de cette étude, une équipe de projet formée d'intervenants du SF et du STI a travaillé sur le projet d'implantation d'un système intégré de gestion budgétaire. Le projet a toutefois été reporté sur plusieurs années, considérant que les ressources humaines et financières n'étaient pas disponibles pour l'acquisition et l'implantation du système.

En 2015, une analyse de criticité révélait que la plupart des systèmes budgétaires utilisés avaient atteint des niveaux de risques opérationnels élevés ou critiques au chapitre de leur fiabilité, leur agilité ou du support disponible en cas de problème. Pour ce qui est du risque lié au mauvais fonctionnement, il a été jugé critique pour chacun des systèmes analysés puisqu'ils sont tous essentiels au processus.

À la suite de cet avertissement, un nouveau projet était mis en route en 2016, mais a été abandonné pour des considérations financières.

Malgré les recommandations émises par des experts, la Ville ne s'est pas encore dotée d'un système budgétaire intégré performant. Le tableau suivant illustre les principaux systèmes utilisés, leur année d'implantation et s'ils sont encore soutenus par le fournisseur ou par le STI.

TABLEAU 13

Description des principaux systèmes et applications contribuant au processus budgétaire

Nom du système (ou de l'application)	Utilisation	Année d'implantation	Soutien
Registre de postes	Système de gestion de la main-d'œuvre	1990	Oui
SBA	Système budgétaire servant à la préparation du budget de fonctionnement	Développement interne IBM 1993	Programmation seulement
RIP	Entrepôt de données	1993	Programmation seulement
Données comparatives	Production des comparatifs –Budget (base Access)	1994	Non
VISION II	Outil de consolidation pour le budget, engagement et le réel	2002	DBA seulement
Outil de répartition	Outil permettant la répartition selon le manuel de comptabilité MAMH_IBM	2002	Programmation seulement
SIMON	Système de gestion intégrée de comptabilité, ressources humaines, paye et approvisionnement	2005	Oracle
INTERSBA	Table de concordance Excel	2006	Non
INTERSEGMENT	Contrôle intégrité Oracle	2006	Oui
AGGL	Outil de répartition		
Fichiers Excel	Panneau de saisie pour la production des documents budgétaires et évolutions budgétaires	2006	Non
PRÉVIS	Système pour la mise à jour et le calcul de la rémunération prévisionnelle (base Access)	2013	Non
Fichiers Access	Divers fichiers de contrôles et de calculs	1995 – 2015	Non

Source: Information compilée par le Bureau du vérificateur général à partir de l'information obtenue du SF, du SRH, du STI et des services centraux.

Comme l'illustre ce tableau, ainsi que l'annexe 5.4., une multitude de systèmes, d'applications, de tables de correspondance, d'interfaces, de passerelles et de fichiers ont été développés afin de pallier à l'inefficacité des systèmes actuels. Ces outils développés pour la plupart à l'interne, ont été conçus et sont utilisés fréquemment par une seule et même personne. De plus, plusieurs d'entre eux ne sont plus supportés par le fournisseur ni par l'équipe du STI.

Ces systèmes ne sont pas intégrés, ce qui exige par conséquent de multiples manipulations et revalidations en plus d'alourdir le processus budgétaire. Un nombre élevé d'opérations manuelles sont requises pour balancer les données des systèmes entre eux. L'information des services consignée dans les fichiers Excel doit être ressaisie dans l'application SBA, car le système est trop désuet pour faire une passerelle. Chaque transaction à saisir requiert beaucoup de temps et de renseignements; il est impossible pour les unités d'affaires de faire des exportations massives de données dans l'application SBA. Toutes ces saisies manuelles comportent des risques d'erreurs ou d'omissions. Les risques d'erreurs dans la programmation des calculs dans les fichiers Excel sont également élevés.

Étant donné qu'il n'existe pas de système budgétaire corporatif leur permettant de préparer leur budget, les unités d'affaires utilisent des fichiers Excel développés selon leurs besoins. Les services audités, avec l'aide de la DCSF, ont tous développé leur propre application pour préparer l'ensemble de leur budget annuel ou pour élaborer des prévisions de dépenses spécifiques. Par exemple, afin de prévoir et gérer la rémunération qui représente 96,5 % du budget du SPVM, la DCSF en collaboration avec le Service a développé des outils Excel pour le suivi de la masse salariale civile, policière, les banques d'heures et le temps supplémentaire. Ces outils permettent de faire des projections à l'aide de plusieurs indicateurs. On utilise donc un fichier Excel pour suivre le budget et préparer les redditions de comptes de la rémunération globale qui représente 655 M\$ en 2021.

Les arrondissements ont également développé leurs propres outils de confection budgétaire étant donné que les systèmes d'information actuels ne répondent pas à leurs besoins. Il y a plusieurs années, l'arrondissement de Saint-Laurent avait développé une application qui lui permettait de préparer l'ensemble de son budget et d'en faire le suivi. Bien qu'il doive maintenant utiliser des fichiers Excel pour préparer son budget selon les instructions reçues et saisir toutes ses données dans l'application SBA depuis 2016, il utilise toujours son application en parallèle pour combler ses besoins d'information et de suivi. Une dizaine d'autres arrondissements font de même et utilise l'application qu'il a conçue.

L'application SBA comporte d'autres limites puisqu'elle permet seulement d'avoir accès à des données statiques, soit celles du budget original. Pour obtenir des informations, on doit attendre au lendemain pour générer des rapports. De plus, comme il est mentionné dans un rapport d'audit que nous avons produit récemment concernant la gestion de cette application¹⁸, plusieurs fonctionnalités sont manquantes en raison de sa désuétude, notamment l'entrée de données automatisée et les interfaces automatisées avec les autres systèmes. L'absence

¹⁸ Gestion de l'application SBA, rapport d'audit adressé au SF et au STI de la Ville et publié dans le présent rapport annuel au chapitre 4, section 4.2.

de procédures formellement documentées de gestion des changements et de gestion des copies de sauvegarde a également été observée, ce qui pourrait avoir des conséquences sur l'intégrité et la disponibilité de l'application et de ses données.

D'autres applications comportent aussi des faiblesses. Concernant le RDD, il n'existe pas de contrôles pour limiter l'accès au fichier Excel à la personne responsable de ces prévisions. Aussi, il n'existe pas de contrôles documentés pour démontrer que les montants inscrits dans l'application SBA correspondent à ceux du système VISION II.

L'application PRÉVIS, sur base Access, est utilisée pour établir les prévisions de rémunération. Elle a été développée en 2013 pour pallier à l'obsolescence de l'application SBA implantée en 1993. À l'origine, cette application ne devait servir que quelques années puisqu'un nouveau système budgétaire corporatif devait être implanté à court terme. Étant donné que cela ne s'est pas réalisé et que l'application SBA est toujours en service, l'application PRÉVIS est encore utilisée et est essentielle pour calculer les montants relatifs à la rémunération globale. Le responsable a également conçu une multitude d'outils sous forme de fichiers et de tables utilisés pour calculer, compiler, valider et vérifier le budget de la rémunération. Cette application n'est pas supportée par le STI puisqu'il s'agit d'un développement interne au SF. En cas de problème, il n'existe pas de soutien externe non plus.

Compte tenu du nombre élevé d'hypothèses et de données utilisées, et de l'ampleur du montant de la dette et des prévisions de dépenses à son égard, de meilleurs outils ou systèmes devraient être implantés afin d'améliorer l'efficacité et l'efficacités du processus budgétaire. Nous avons été informés lors de nos travaux, qu'un projet est en cours à cet effet. La confection du document budgétaire comporte également des difficultés, puisque les systèmes actuels alourdissent le processus de modification du document lorsque des changements doivent être apportés aux tableaux qui y sont présentés. En effet, en raison de l'absence d'un système d'information intégré, plusieurs fichiers indépendants doivent parfois être modifiés et des délais de chargement des données entre ces derniers et le document budgétaire sont observés. Cette situation exige des efforts additionnels de la part des équipes concernées, particulièrement lorsque des décisions surviennent à la dernière minute.

En résumé, la confection du budget de fonctionnement de la Ville, totalisant 6,17 G\$, repose en grande partie sur une multitude de fichiers Excel et d'applications désuètes. Nous constatons donc l'urgence de la situation et l'importance de remplacer ces outils et systèmes d'information. Selon le plan d'immobilisations le plus récent, soit le Plan décennal d'immobilisations 2021-2030¹⁹, le projet concernant le système budgétaire est prévu débuter en 2024 seulement. Nous sommes d'avis que ces travaux devraient commencer plus tôt, et ce, afin de limiter les risques et d'améliorer l'efficacité et l'efficacités du processus budgétaire.

¹⁹ Le Programme décennal d'immobilisations 2021-2030 prévoit des investissements de 2,3 M\$ en 2024 et 2025 et de 3,1 M\$ pour la période 2026-2030.

3.5.2. Ressources humaines

En plus des déficiences soulevées précédemment, la désuétude des outils et systèmes a également des impacts sur les ressources humaines. En effet, les ressources affectées à la confection du budget et à son suivi consacrent une grande partie de leur temps à effectuer des tâches cléricales de recherche et de conciliation de données plutôt qu'à planifier et faire des analyses. Cela a pour conséquence directe d'accroître les risques d'erreurs et d'omissions, de même que l'inefficience du processus.

La préparation du budget mobilise des centaines de personnes au sein du SF, des services centraux et des arrondissements de la Ville. Bien qu'il n'y ait pas de données quant au nombre d'années-personnes dédiées à la confection du budget, nous avons recensé l'information suivante, à titre indicatif, concernant les personnes impliquées dans le processus :

- 32 personnes à la Direction du budget;
- 106 personnes à la DCSF (en plus de quelques personnes impliquées dans les services centraux);
- 15 personnes dans les 3 arrondissements audités.

Dans le contexte des systèmes d'information actuels, le processus budgétaire est complexe et représente un travail colossal qui s'étend pendant toute l'année. Il requiert, de plus, une documentation appropriée et des connaissances spécifiques pour exécuter certaines tâches ou effectuer les analyses requises pour établir certaines prévisions, par exemple celles relatives à la rémunération. Or, nous avons constaté que la documentation est insuffisante et que des étapes-clés du processus reposent sur une seule personne.

De plus, bien que des plans de relève soient établis pour les départs à la retraite, y compris des mesures pour assurer le transfert des connaissances, aucun plan de relève n'est prévu pour pallier le risque de départs d'employés du SF pour d'autres motifs que la retraite.

Par ailleurs, les arrondissements audités jugent que les ressources humaines dont ils disposent sont suffisantes et que celles-ci ont les connaissances et l'expertise requise. Cependant, bien que des mesures soient prévues pour maintenir cette expertise au cours des prochaines années, un des arrondissements audités nous a fait part d'une certaine fragilité à cet égard étant donné que cette expertise est concentrée sur quelques personnes et qu'il peine à recruter lorsque des postes deviennent vacants. Des problématiques de pérennité humaine et technique ont aussi été observées lors de notre audit de l'application SBA, ce qui peut engendrer une perte de connaissances et de maîtrise de cette dernière.

Une vulnérabilité additionnelle, liée aux ressources humaines, s'ajoute donc aux risques exposés précédemment dus à la désuétude et à la complexité des systèmes d'information actuels. Il est donc impératif d'accélérer les démarches visant la mise à jour et l'intégration des outils technologiques, d'améliorer la documentation du processus et de s'assurer d'une relève et d'un transfert approprié des connaissances pour les étapes importantes ou complexes du processus.

3.5.2.A. Recommandation

Nous recommandons à la Direction générale de relancer le projet, de se doter d'un système d'information et de gestion budgétaire intégré et de le prévoir dès 2021 au Plan décennal d'immobilisations 2022-2031.

3.5.2.B. Recommandation

Nous recommandons au Service des finances de s'assurer que son plan de relève des ressources humaines couvre tous les postes-clés du processus budgétaire et qu'il prévoit des mesures pour assurer la formation du personnel et le transfert des connaissances nécessaires à son bon fonctionnement.

3.5.2.C. Recommandation

Nous recommandons au Service des finances de prendre les mesures appropriées pour protéger l'intégrité de l'information des nombreux fichiers de types Microsoft Excel et Access utilisés par son personnel et celui des services centraux et des arrondissements.

4. Conclusion

Le processus budgétaire de la Ville de Montréal (la Ville) est complexe. Il nécessite la participation d'un grand nombre de personnes et d'unités d'affaires dans le contexte particulier de gouvernance de la Ville qui est composé de la ville-centre, de 19 arrondissements et de 15 autres villes liées à l'agglomération de Montréal. Ces 3 niveaux de compétences doivent être pris en compte lors de l'établissement des prévisions de revenus et de dépenses afin d'allouer les ressources de manière optimale, ce qui requière la mise en place d'un processus efficace et rigoureux.

Bien que la Ville se soit dotée d'un cadre de gestion spécifique au processus budgétaire et de mécanismes formels de prises de décisions à l'égard des orientations déterminées pour atteindre l'équilibre budgétaire, nos travaux nous amènent à conclure que le processus actuel comporte plusieurs lacunes.

En effet, nous avons constaté que le cadre financier élaboré pour présenter des projections financières quinquennales et éclairer la prise de décisions se concentre sur le budget de la prochaine année. Ce cadre financier préliminaire sert donc principalement à établir les contraintes annuelles afin d'atteindre l'équilibre budgétaire et il n'est pas suivi d'un cadre financier quinquennal équilibré qui exposerait les risques et les défis des projections actuelles. Un cadre financier met l'accent sur les tendances favorables et défavorables. Il est donc un instrument incontournable de la gestion budgétaire, particulièrement dans le contexte où le déséquilibre budgétaire structurel de la Ville augmente.

De plus, le processus budgétaire n'est pas inscrit dans une démarche globale de planification. La Ville s'est dotée récemment de son premier plan stratégique, mais il n'y a pas encore de plan pour arrimer le processus budgétaire à la planification stratégique. Des priorités organisationnelles communiquées par la Direction générale servaient de toile de fond, sans toutefois que le budget des unités d'affaires soit établi en fonction de celles-ci, de leurs activités ou du niveau de service.

En ce qui concerne l'élaboration des prévisions de revenus et de dépenses, des processus structurés ont été mis en place pour recueillir les données pertinentes et en faire l'analyse. Cependant, des améliorations doivent y être apportées, notamment au chapitre de la documentation et des contrôles, afin de limiter la perte d'expertises liée aux départs d'employés spécialisés et le risque d'erreurs. De plus, la méthode d'établissement des prévisions doit être revue afin qu'elles soient plus représentatives de la réalité. Nos travaux ont révélé l'existence de surestimations et de sous-estimations d'année en année pour certaines catégories de revenus et de dépenses, parfois de grande ampleur, ce qui crée une sorte de biais structurel qui empêche d'avoir une vision nette du budget.

Aussi, les résultats historiques et les projections de l'année en cours ne sont pas pris en compte pour établir les orientations et les enveloppes budgétaires des unités d'affaires. De plus, le montant des enveloppes attribuées aux services est obtenu à partir d'ajustements apportés au budget de l'année précédente qui provient lui-même du montant des budgets précédents. En l'absence d'évaluation et de balises, quant au niveau de service ou d'activité lié aux dépenses budgétées, l'imputabilité des services s'en trouve compromise et leur déficit budgétaire doit être compensé

par des écarts anticipés dans d'autres unités d'affaires ou d'autres postes budgétaires.

Par ailleurs, en ce qui concerne les arrondissements, les transferts centraux qui leur sont accordés n'ont pas fait l'objet d'une réévaluation pour déterminer s'ils reflètent bien les besoins actuels des arrondissements et si les paramètres utilisés sont toujours appropriés. Une révision du modèle paramétrique déterminé en 2014 lors de la réforme du financement des arrondissements était prévue après cinq ans, mais n'a pas été réalisée.

Nous avons de plus constaté que, parallèlement, des sommes sont distribuées aux arrondissements, ou réduites de leurs transferts, alors qu'elles ne sont pas budgétées. Elles proviennent notamment d'activités et de revenus centralisés à la Ville et sont transférées directement dans les surplus de gestion des arrondissements. Cette façon de faire ne favorise pas la transparence budgétaire et l'allocation optimale des ressources lors de la confection du budget, alors que ces sommes contribuent au financement de dépenses de fonctionnement et à la croissance des excédents accumulés des arrondissements et qu'elles ne sont pas divulguées.

Lors de la consolidation des budgets des unités d'affaires, il n'existe pas de critères officiels de priorisation pour appuyer le processus décisionnel à l'égard de l'acceptation ou non des nouvelles demandes ou pour procéder à des coupures du budget de fonctionnement. De plus, les décisions prises lors de l'arbitrage budgétaire final ne sont pas documentées adéquatement. Les justifications n'étaient pas présentées dans les documents que nous avons consultés et il n'existe pas de comptes-rendus des décisions approuvées par le comité de budget administratif et le comité de budget politique.

Lors de l'étude du budget par la Commission sur les finances et l'administration (CFA), les données présentées concernant les revenus et les dépenses des services incluaient les résultats réels des dernières années sans toutefois présenter le budget correspondant. L'évaluation par la CFA de la capacité des services à réaliser les enveloppes budgétaires accordées s'avère donc difficile. La présentation du budget global ne contient pas non plus des informations sur les tendances des écarts entre le budget de revenus et de dépenses par objets. Ces renseignements permettraient à la CFA d'avoir un portrait plus juste de la situation et ainsi d'apprécier de manière plus complète les prévisions présentées au budget.

Actuellement, aucun document ne permet d'évaluer la performance budgétaire de la Ville. Une reddition de comptes est faite annuellement pour présenter les résultats de chaque exercice financier, comparativement au budget, mais l'information est insuffisante pour faire cette évaluation puisqu'elle porte sur une année seulement. En ce qui concerne les budgets des arrondissements audités, les documents publiés lors des présentations aux conseils d'arrondissement contenaient une information insuffisante et très sommaire dans certains cas. Aussi, le fait que les prévisions de dépenses soient présentées par activités dans le cas de deux arrondissements, alors que le budget global de la Ville les présente par objets, fait en sorte que les instances et les citoyens peuvent difficilement faire le lien entre ces deux types d'information afin d'apprécier le budget de même que la nature et l'évolution des dépenses.

Finalement, la plupart des systèmes utilisés dans le cadre du processus budgétaire sont désuets et ne sont plus supportés par les fournisseurs. Ces systèmes mis en place bien avant les fusions, les défusions et la création de l'agglomération ont été rafistolés par le Service des finances (SF) et le Service des technologies de l'information afin d'être en mesure de produire des budgets. Les utilisateurs du SF ont dû créer des applications parallèles gérées sur des fichiers Excel ou Access, des passerelles et divers outils afin de remplir leurs obligations. De leur côté, les différentes unités d'affaires en ont fait de même, accroissant ainsi les risques d'erreurs et nécessitant des contrôles compensatoires pour les atténuer. La confection du budget de fonctionnement de la Ville, totalisant 6,17 G\$, repose donc en grande partie sur une multitude de fichiers Excel et d'applications désuètes.

Plusieurs études effectuées au fil du temps ont révélé que les systèmes budgétaires utilisés avaient atteint des niveaux de risques opérationnels élevés ou critiques au chapitre de leur fiabilité, de leur agilité ou du support disponible en cas de problème. Malgré les recommandations émises par des experts, la Ville ne s'est pas encore dotée d'un système budgétaire intégré performant et ne prévoit pas le faire avant 2024.

Sur la base de ces constats, nous avons notamment recommandé à la Ville :

- de se doter d'un cadre financier quinquennal équilibré qui permette de voir au-delà du budget de fonctionnement annuel, d'y présenter les principaux risques et défis à venir et de le rendre public afin que les élus et les citoyens puissent mieux apprécier la signification du budget présenté;
- de poursuivre ses efforts afin de mettre en œuvre le plan stratégique Montréal 2030 et d'élaborer des plans opérationnels et financiers qui pourront s'intégrer au processus budgétaire et, ainsi, favoriser l'atteinte des objectifs poursuivis;
- de revoir la méthode d'établissement des prévisions de revenus et de dépenses qui s'avèrent surévaluées ou sous-évaluées d'année en année, afin que le budget présente plus clairement les sources de financement et les dépenses prévues;
- d'évaluer l'ampleur de l'écart structurel entre les revenus et les dépenses afin de déterminer les sources de financement qui permettraient d'y remédier et de limiter l'utilisation d'excédents accumulés non affectés pour équilibrer le budget;
- de consulter les services et de prendre en compte leurs résultats historiques avant la détermination des orientations et des enveloppes budgétaires et d'informer toutes les personnes impliquées dans la confection des budgets des services centraux;
- de revoir la méthode utilisée pour répartir les transferts centraux aux arrondissements afin de s'assurer qu'elle permet encore d'allouer les budgets de manière équitable, selon les compétences qui leurs sont dévolues, et de répondre aux exigences de la Ville en matière de qualité et du niveau de services aux citoyens;

- de revoir le processus budgétaire afin notamment de mettre en place un système budgétaire et financier permettant de budgéter en fonction du niveau de service ou d'activité attendu, ainsi que des plans opérationnels clairement définis permettant le suivi des indicateurs pour mesurer l'atteinte des résultats;
- de s'assurer que les revenus et les dépenses prévisibles contenus dans l'ajustement des surplus de gestions aux arrondissements soient inclus au budget en tenant compte des résultats historiques plutôt que d'être ajoutés aux excédents de fonctionnement accumulés en fin d'année;
- de déterminer des critères pour évaluer et prioriser les demandes additionnelles, afin de prendre des décisions éclairées, et de documenter cette évaluation;
- de valider auprès de la CFA, si cette dernière désire disposer d'une information en regard des résultats passés et des tendances pour qu'ainsi la performance budgétaire puisse être évaluée lors de l'étude du budget avant d'en recommander l'adoption au conseil municipal et au conseil d'agglomération;
- de relancer le projet de se doter d'un système d'information et de gestion budgétaire intégré et de le prévoir dès 2021 au Plan décennal d'immobilisations 2020-2030;
- de s'assurer que le plan de relève des ressources humaines du SF couvre tous les postes-clés du processus budgétaire et qu'il prévoit des mesures pour assurer la formation du personnel et le transfert des connaissances nécessaires à son bon fonctionnement;
- de prendre les mesures appropriées pour protéger l'intégrité de l'information des nombreux fichiers de types Microsoft Excel et Access utilisés par son personnel et celui des services centraux et des arrondissements pour déterminer les enveloppes budgétaires et les prévisions de revenus et de dépenses.

Nous recommandons également aux arrondissements de Mercier-Hochelaga-Maisonneuve et de Saint-Laurent de prévoir au budget l'ensemble des dépenses de fonctionnement prévues au cours de la prochaine année, ainsi que les affectations de surplus nécessaires pour les financer. Aussi, nous recommandons à ces deux arrondissements et à l'arrondissement de Ville-Marie d'améliorer la documentation de leurs processus budgétaires et de revoir le contenu des documents budgétaires présentés à leur conseil d'arrondissement afin que ce dernier et les citoyens disposent d'une information complète sur le budget leur permettant d'évaluer ce dernier au regard des résultats financiers historiques et de l'information présentée dans le document budgétaire de la Ville.

Il est impératif que la Ville revisite son processus budgétaire et qu'elle se dote de systèmes budgétaires et financiers performants. Les enjeux auxquels elle devra faire face au cours des prochaines années l'exigent, notamment l'augmentation croissante du déséquilibre budgétaire structurel, l'investissement massif requis pour la réfection des infrastructures existantes et le financement des dépenses de fonctionnement et d'entretien de ses nouvelles infrastructures.

5. Annexes

5.1. Objectif et critères d'évaluation

Objectif

S'assurer que le processus supportant la confection du budget de fonctionnement de la Ville de Montréal (la Ville) est efficace et rigoureux

Critères d'évaluation

- Un mécanisme formel est mis en place afin de permettre aux instances de prendre des décisions éclairées à l'égard des stratégies et des orientations déterminées pour atteindre l'équilibre budgétaire. Ces décisions sont clairement documentées, cohérentes avec les priorités organisationnelles et elles font l'objet d'un suivi pour s'assurer qu'elles sont reflétées dans le budget.
- Il existe des orientations budgétaires claires ainsi que des politiques et un cadre de gestion spécifique au processus budgétaire. Cet encadrement est à jour, formellement approuvé et diffusé auprès des parties prenantes.
- Les rôles et les responsabilités des parties prenantes sont clairement définis, documentés et diffusés.
- Chaque phase du processus budgétaire est approuvée par l'instance appropriée et des mécanismes de contrôle efficaces sont en place pour assurer la qualité de l'information produite.
- Des procédures, des guides, des outils et des systèmes ont été développés et assurent la fiabilité et l'uniformité de l'information produite pour la confection du budget. Ces outils sont suffisants et formellement diffusés auprès des parties prenantes.
- Les données et les méthodes utilisées pour déterminer les hypothèses et les prévisions de revenus et de dépenses sont pertinentes, complètes et documentées.

- Le processus de production des enveloppes budgétaires destinées aux unités d'affaires (p. ex. les services centraux et les arrondissements) est rigoureux et ces enveloppes budgétaires reflètent la situation financière actuelle de la Ville, celle des unités d'affaires et les orientations budgétaires. Ce processus comporte notamment des :
 - instructions claires et suffisantes;
 - méthodes et des critères pertinents pour favoriser l'allocation optimale des ressources;
 - mécanismes permettant d'assurer le suivi des enveloppes budgétaires accordées et des demandes additionnelles;
 - mécanismes appropriés pour effectuer la consolidation de l'information provenant des unités d'affaires.

- Le budget des unités d'affaires repose sur un processus rigoureux et il reflète les orientations et les instructions reçues, les enveloppes budgétaires accordées ainsi que les orientations qu'elles ont déterminées.

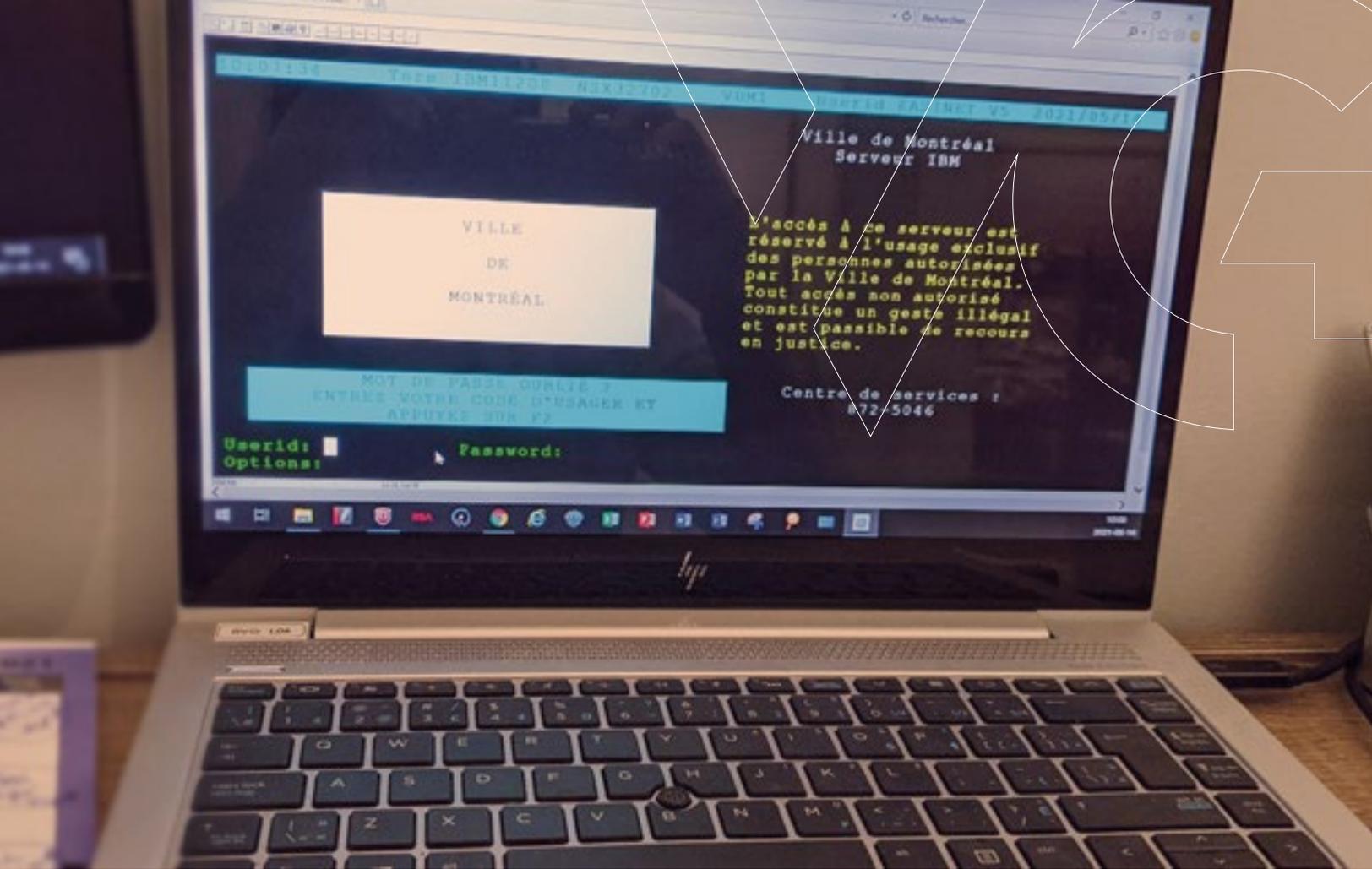
5.3. Processus décisionnel menant à l'adoption du budget

Instance (ou comité)	Composition	Rôle
Conseil d'agglomération	<ul style="list-style-type: none"> • Mairesse; • 15 élus municipaux; • 15 représentants des villes reconstituées. 	<ul style="list-style-type: none"> • Adopte le budget relatif à l'agglomération, soit celui des dépenses liées aux services communs à tout le territoire de l'île de Montréal.
Conseil municipal	<ul style="list-style-type: none"> • Mairesse; • 18 maires d'arrondissement; • 46 conseillers de la Ville. 	<ul style="list-style-type: none"> • Adopte le budget de la Ville de Montréal.
Commission sur les finances et l'administration	<ul style="list-style-type: none"> • 12 membres nommés parmi les élus de la Ville de Montréal, des arrondissements et des villes reconstituées. 	<ul style="list-style-type: none"> • Étudie le budget de fonctionnement de la Ville de Montréal afin d'éclairer la prise de décisions des élus qui siègent au conseil municipal et au conseil d'agglomération.
Comité exécutif	<ul style="list-style-type: none"> • Élus de la majorité; • Mairesse; • Président. 	<ul style="list-style-type: none"> • Instance décisionnelle pour toutes les orientations budgétaires de la Ville de Montréal; • Par l'intermédiaire du président du comité exécutif, les orientations politiques sont transmises et discutées au comité de budget politique.
Comité de budget politique	<ul style="list-style-type: none"> • Président du comité exécutif; • Membre de son cabinet et celui de la mairesse; • Direction générale; • Représentants des services et directions suivantes: <ul style="list-style-type: none"> – Service des finances; – Service des ressources humaines; – Direction du budget et de la planification financière et fiscale. 	<ul style="list-style-type: none"> • Assure le lien entre les décisions politiques et la mise en œuvre administrative.

Instance (ou comité)	Composition	Rôle
Comité de budget administratif	<ul style="list-style-type: none"> • Directeur général; • Représentants des services et directions suivantes : <ul style="list-style-type: none"> – Service des finances; – Direction du budget et de la planification financière et fiscale; – Direction du conseil et du soutien financier; – Service des ressources humaines; – Bureau des projets et programmes d’immobilisations; – Bureau des relations intergouvernementales et municipales. 	<ul style="list-style-type: none"> • Formule des propositions au comité de budget politique; • S’assure que toutes les décisions et orientations budgétaires sont reflétées dans les budgets des unités d’affaires.

Source: Charte de projet – processus budgétaire et site Internet de la Ville.





4.2.

Management of the Système budgétaire automatisé Application

February 9, 2021

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

Management of the Système budgétaire automatisé Application

The Système budgétaire automatisé (SBA) is the primary budget application of the Ville de Montréal (the City). This application, which was developed internally in the early 1990s, contains all the City's budget data, both revenues and expenditures. The 2021 operating budget is \$6.17B.

Background

The Service des finances (SF) is responsible for daily and operational tasks. At the other end, the Service des technologies de l'information (STI) provides support for the application and is responsible for, among other things, programming and deploying changes, managing access requests and incidents, and preparing backup copies.

This application, which is hosted on the IBM mainframe computer, will need to be replaced in 2024 as part of the "Système budgétaire" project within the 2021–2030 Ten-year capital works program. In 2009, a study into implementing a new budget process was conducted, which proposed, among other things, to replace the SBA application with a solution integrated into the SIMON accounting system and new budget monitoring functionalities.

Purpose of the Audit

The purpose of this audit was to determine whether the control mechanisms put in place for the SBA application ensure that it does not present any major risk to the confidentiality, integrity and availability of the data.

Results

We concluded that, for certain control mechanisms listed below, improvements are needed to avoid loss of data integrity and availability of the application, which would cause major harm to the City's budget operations.

Roles and responsibilities are inadequately documented. In addition, the owner of the SBA application is not formally identified in any documentation.

Regarding access management, no specific procedure exists for the SBA application, the password parameters do not comply with the City's frameworks, and there is no logging or monitoring of access.

Change management is not framed within a formally documented, approved and distributed procedure.

The SF and the STI have no formal succession plan for existing human resources.

Incident management is not part of a formal procedure.

Main Findings

Roles and Responsibilities

- Roles and responsibilities and ownership of the SBA application are not formally identified, documented and known to all the stakeholders.

Access Management

- No formal procedure exists for managing access to the SBA application. The configuration of the passwords does not comply with the City's new standard. There is no logging or monitoring of access in the SBA application. On the other hand, the management of access profiles, the annual review and the management of generic and highly privileged accounts are adequate.

Change Management

- Change management is not part of a formal procedure. Requests for changes are not systematically documented. Those that are documented do not follow the production steps to implement a change (e.g., lack of analysis, approval of changes, tests and deployment).

Human Resources and Technical Sustainability

- No succession plan for human resources and knowledge transfer has been developed. The SBA application, which dates from the 1990s, is facing technological obsolescence.

Operations Management

- Documentation of the operations management of the SBA application, which is available to users and pilots, is adequate.
- Incident management is not subject to a formal procedure, and incidents are not systematically documented.
- Backup copies are made regularly and systematically. However, there is no procedure specific to the SBA application for the management of backup copies, and no periodic recovery tests are performed on the copies.

In addition to these results, we have made various recommendations to the business units, which are presented in the following pages. These business units were given the opportunity to agree to the recommendations.

List of Acronyms



RACI	Responsible, Accountable, Consulted, Informed
SBA	Système budgétaire automatisé
SF	Service des finances
SIMON	Système intégré Montréal
STI	Service des technologies de l'information
TCWP	Three-Year Capital Works Program



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1. Background

The *Système budgétaire automatisé* (SBA) is a corporate tool used to prepare the annual budget of the central departments, boroughs and other budget lines (e.g., common expenses, financial expenditures and contribution expenditures). This includes both revenues and expenditures, as well as the number of employee positions. The SBA is the main budget application of the Ville de Montréal (the City).

This application contains all the City's operational budget data. The Ten-year capital works program resides in another application called INVESTI. The 2021 operating budget is \$6.17B. The SBA application details revenues and expenditures in several categories (e.g., revenues: property taxes, fines, licences and permits; expenditures: administrative services, public safety, services to citizens) that serve as the basis for the allocation of revenues and expenditures.

The application is open, in modification mode, from June to August for the preparation of the budget. During this period, while budget envelopes are created, users may, for example, change their budget structure or create/remove accounts and salaried employee positions. The application is then reopened in modification mode in September to allow the business units to revise their budgets and make corrections. During the remainder of the year, the SBA application is in read-only mode. At year-end, the budget data is transmitted to the *Système intégré Montréal* (SIMON) accounting system and the *Registre des postes* application. The latter is used to manage human resources information on the City's workforce and organizational structure.

The Service des finances (SF) is responsible for daily and operational tasks. The Service des technologies de l'information (STI) supports the application and is responsible for, among other things, programming and deploying changes, managing access requests and incidents, and preparing daily backup copies.

With more than 200 users, the SBA application is hosted on the IBM mainframe computer. The application was created around the early 1990s. As a result of this obsolescence, many of the functionalities that could simplify the work of users and managers are missing:

- Automated data entry;
- Changes to access management by group (they are done individually);
- Automated interfaces with other systems (e.g., SIMON);
- Production of comparatives (by year);
- Budget changes (e.g., quarterly report).

Over the years, the City has looked into replacing this application. In fact, a study was carried out by an outside firm in 2009 to evaluate the implementation of a new budget process. The conclusions of this study included, among other things, replacing the SBA application with a solution that would include better budget monitoring (e.g., quarterly) and be integrated with SIMON (the City's accounting system), thereby eliminating the need for data entry and tables of correspondence between the systems. In addition, a project called "budget solution" was launched in 2013. Preparing the call for tenders for this project took two years. Following a restructuring of the STI, it was halted in 2015 before being abandoned due to a lack of human and financial resources. More recently, the project to replace the SBA application resurfaced in the 2021–2030 Ten-year capital works program¹ as part of the "Système budgétaire" project. Work should begin in 2024.

2. Purpose and Scope of the Audit

Under the provisions of the *Cities and Towns Act* (CTA), we completed a performance audit mission on the management of the SBA application. We performed this mission in accordance with the *Canadian Standard on Assurance Engagements* (CSAE) 3001, described in the *CPA Canada Handbook – Assurance*.

The purpose of this audit was to evaluate the control mechanisms put in place for the SBA application to ensure that it does not present any major risk to the confidentiality, integrity and availability of data.

The role of the Auditor General of the Ville de Montréal is to provide a conclusion regarding the objectives of the audit. To do so, we collected a sufficient amount of relevant evidence on which to base our conclusion and to obtain a reasonable level of assurance. Our assessment is based on criteria we have deemed valid for the purposes of this audit. They are presented in Appendix 5.1.

¹ "Système budgétaire" project file 21_4204_068 in the 2021–2030 Ten-year capital works program.

The Auditor General of the Ville de Montréal applies *Canadian Standard on Quality Control (CSQC) 1* from the *CPA Canada Handbook – Certification* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. In addition, it complies with the independence and other ethical requirements of the *Code of ethics of chartered professional accountants*, which are founded on fundamental principles of integrity, professional competence and due diligence, confidentiality and professional conduct.

Our audit work focused on the period from June 2020 to January 2021. It consisted in conducting interviews with staff, examining various documents, and doing surveys that we deemed appropriate to obtain the necessary supporting information. We also took into account information that was sent to us up to February 2021.

Upon completing our audit, we submitted a draft audit report to the managers of each audited business unit for discussion purposes. The final report was then forwarded to the Direction générale, as well as to the management of each business unit involved in the audit to obtain action plans and timelines for implementing the recommendations concerning it.

3. Audit Results

3.1. Roles and Responsibilities

To define clear accountability regarding roles and responsibilities, these must be properly defined, written down and validated by all the parties concerned. It is common practice for this process to result in the creation of a RACI (Responsible, Accountable, Consulted, Informed) matrix that serves as a reference for each process of the application throughout its life cycle. It can also serve as a basis if the application requires an upgrade or has to migrate towards a new system.

It is also important to define the person responsible for each application, thereby establishing clear accountability for every action that requires a chain of validation. The owner of the application is responsible for its operational management. That person must be involved in every major change and every application migration.

We obtained a draft of the RACI matrix, which is only in its first version. This matrix is therefore incomplete and not formalized (no role has been defined for three of the five phases of budget preparation). It is important to note that the roles and responsibilities are well known to the current, longstanding, main stakeholders. Nevertheless, these roles and responsibilities are not documented. In addition, the owner is not formally identified.

The absence of a matrix of roles and responsibilities could result in shortcomings in the governance of the application, such as:

- Ineffective collaboration between the teams (e.g., users redirected to the wrong teams for access or incident management);
- Application privileges granted without prior validation;
- When the roles and responsibilities of each person are not formally defined and assigned, some tasks run the risk of not being completed, while others could have several persons managing them, which could lead to confusion, omissions and uneven actions taken to manage the SBA application.

3.1.A. Recommendation

We recommend that the Service des finances, jointly with the Service des technologies de l'information:

- Complete, approve and distribute the matrix of roles and responsibilities for the Système budgétaire automatisé application;
- Formalize the owner of the application in the matrix.

3.2. Access Management

3.2.1. Access Management Policy

Publishing policies and directives provides a framework for certain processes, thereby limiting the risk of inconsistencies in the actions taken and preventing access from being bypassed or privileges abused.

A Politique de gestion des accès usually consists of rules governing the granting, withdrawal, modification and periodic review of access rights.

We concluded that the only guide for requests to access the SBA application consists of an inset box on the City's Intranet. In our opinion, this is not a formal access management procedure.

Granting, modifying and withdrawing access are done based on the following appropriate steps:

- The responsible persons in the business units and boroughs enter access requests directly into the DASI application or "Demande d'accès aux systèmes informatiques";
- These requests are then conveyed to the team in the STI's Centre d'expertise;
- The team creates access codes in the IBM mainframe computer;
- Once the access requests are validated, the SBA application pilot² gives access according to the profiles and business units requested.

² A pilot is a superuser with in-depth technical knowledge, who acts as an intermediary between the business units and the STI to ensure the application runs smoothly.

To validate that the access requests follow the steps outlined above, efficacy tests were conducted on a sample of access requests (four selected out of a total of 33 between October 2019 and November 2020). The results of these tests showed that these steps were properly followed.

An appropriate review of access rights is performed annually. Using samples, we examined the access reviews of five administrative units out of a total of 43 for the years 2018 and 2019. The access review requests and associated changes were properly done.

We analyzed the seven administrator accounts and three generic accounts. These were justified and effectively managed.

Without formalized and documented access management, the City could face the following risks:

- Errors due to incorrect interpretation of informal directives;
- Inappropriate access rights granted.

3.2.1.A. Recommendation

We recommend that the Service des finances, in collaboration with the Service des technologies de l'information, create an access management procedure specific to the Système budgétaire automatisé application and ensure that it is distributed to the stakeholders.

3.2.2. Password Management

The access key in an application, i.e., the combination of a user code and a password, must be robust and sufficiently restrictive to limit the risk of unauthorized access. Password authorization settings must be aligned with the City's policy (e.g., minimum length of the password, inclusion of capital letters and special characters, impossibility of reusing earlier passwords).

The SBA application is hosted on the IBM mainframe computer, as is the case with several other applications. Users do not have direct access to the application but must first authenticate themselves to the City's network and then authenticate themselves to the SBA. Password settings are the same for all applications on the IBM mainframe computer.

Very recently, the City distributed new relevant frameworks for access management in:

- The Directive sur la gestion des accès (issued in July 2020);
- The Standard sur la gestion des accès (issued in November 2020).

In comparing password settings in the IBM system with the requirements of the frameworks, we uncovered certain discrepancies.

Unauthorized access could occur when users use passwords that do not comply with the requirements of the new access management frameworks.

3.2.2.A. Recommendation

We recommend that the Service des technologies de l'information comply with the new access management frameworks.

3.2.3. Access Monitoring

An access monitoring process is required to prevent unauthorized access attempts or to detect incidents related to users' access. This monitoring will also allow more efficient analysis in case of access management incidents.

We concluded that there is no logging or monitoring of access in the SBA application.

Without access monitoring, it is impossible to effectively prevent unauthorized access attempts. As well, the absence of an access log makes it difficult to retrace events in case of an incident.

3.2.3.A. Recommendation

We recommend that the Service des technologies de l'information implement a recurring process for logging and monitoring access in the Système budgétaire automatisé application.

3.2.4. Segregation of Duties

To prevent unauthorized access to the SBA application, it is important to segregate profiles and rights granted. To this end, the granting of highly privileged accounts must be regulated and monitored.

We examined the various types of access profiles and concluded that there is no conflict or incompatible task with the pre-established profiles. This confirms that the profiles are satisfactorily managed in the SBA application.

No recommendation is required.

3.3. Change Management

Any change in the production environment must follow a certain number of regulations, processes and validations. Without processes and adapted controls, the integrity and stability of the application are at risk. The use of appropriate tools to follow up, control and monitor changes is paramount.

In a production environment, as opposed to a test environment, it is common to see change errors made by the programming team, since programmers have write access in both environments. When programmers have direct access to production, they can also circumvent official processes.

We obtained a file that summarizes the various steps involved in implementing a change:

- Functional analyses by the pilots and technical and impact analyses by the developers;
- Approval by the pilots and the division head;
- Development by the developers;
- Unit tests by the developers, approval tests by the pilots, and user-expert tests;
- Deployment by the production team at the STI.

Nevertheless, this does not constitute a formally documented and approved procedure that is known to all stakeholders.

To validate that change requests follow the recommended steps up to deployment, efficacy tests were performed on a sample base. For the entire year 2020, we found that only four change requests were entered into the CA Service Desk ticketing tool. Based on our discussions with the stakeholders, other changes were made, but these were not systematically documented.

Nevertheless, we analyzed the four documented change requests and concluded that they did not follow sound change management practices (e.g., lack of analysis, approval of tests and deployment authorizations).

Based on our audit, the sole SBA application programmer does not have access to the production environment, which is proper.

The absence of a formally documented change management procedure increases the risk of unauthorized and undesirable changes being deployed, which could have consequences for the integrity and availability of the SBA application and its data.

3.3.A. Recommendation

We recommend that the Service des finances, in collaboration with the Service des technologies de l'information, establish a formal change management procedure.

3.4. Human and Technical Continuity

In the case of an application developed internally that dates from the early 1990s and uses old technology, it is especially important to:

- Conduct updates to ensure adequate technological advances (given that the SBA is an in-house application, updates are done through change requests. See Section 3.3 of the report);
- Develop a succession plan for adequate and sufficient human resources to ensure the continuity of operations.

According to the STI and the SF, the availability of specialized human resources on the job market is a major issue, yet no formal succession plan has been put in place for existing resources and to ensure knowledge transfer. We found no designated replacements for the one programmer/developer in the STI and the three pilots in the SF. The latter are eligible for retirement within the next four to six years.

In the 2021–2030 Ten-year capital works program,³ plans are to replace the SBA application as part of the “Système budgétaire” project starting in 2024.

The City is facing a lack of specialized human resources and a major technological liability:

- Lack of a human resources succession plan, including ensuring knowledge transfer;
- Lack of availability of competent resources (e.g., mastery of old technology and accounting knowledge) on the job market.

Human and technical continuity problems could cause a loss of knowledge and mastery of the application. It would then be difficult to keep the SBA application operational until its replacement and would make proper budget management difficult for the City.

3.4.A. Recommendation

We recommend that the Service des finances and the Service des technologies de l’information put in place a human resources succession plan, including knowledge transfer.

³ “Système budgétaire” project file 21_4204_068 in the 2021–2030 Ten-year capital works program.

3.5. Operations Management

3.5.1. Documentation

Clear documentation that is regularly updated is important to ensure the operational efficacy and maintainability of the application.

We noted that the procedures and guides available to users and pilots are adequate. We found, among other things, descriptions of the tasks and activities to be performed by the pilots, as well as the various SBA application procedures for preparing the budget (e.g., fiscal year change, budget approval, data transfers).

No recommendation is required.

3.5.2. Management of Incidents and Problems

Each detected incident must be properly documented in a ticketing application that makes it easy to identify the specific incident by documenting the origin of the problem, its impact and its resolution.

An incident follow-up process requiring an action plan must be put in place to ensure that mitigation measures have been implemented.

Apart from a training document and a process diagram outlining the various steps for the use and creation of incident tickets in the CA Service Desk tool, there is no complete, documented, approved and distributed procedure for the management of incidents specific to the SBA application.

Some users create a ticket in the CA Service Desk tool managed by the STI. However, most users call the pilot of the application directly at the SF to report an incident. Between January 2019 and September 2020, we noted only four incidents documented in the tool, which confirms that incidents are not systematically documented in the CA Service Desk tool. During our audit, we were able to validate the existence of the following relevant information for the four incidents:

- Date the ticket was created;
- Priority;
- Impact;
- Description;
- Status of the incident;
- Resolution.

In the absence of a formal procedure, the different incident management steps cannot be defined or standardized, with the result that incidents are not systematically documented. The SF faces the following risks:

- Incidents may not be resolved in a timely manner;
- The absence of an incident history may make it impossible to prevent recurring events, which could result in needless costs and wasted time.

3.5.2.A. Recommendation

We recommend that the Service des finances, in collaboration with the Service des technologies de l'information:

- Create an incident management procedure for the *Système budgétaire automatisé*;
- Systematically document incidents.

3.5.3. Management of Backup Copies

In the event of an incident, the backup copy process ensures that the data lost can be restored in its entirety. This process must be documented and subjected to recovery tests on a regular basis to ensure that it is working smoothly.

We should mention from the outset that there is no formal procedure for the management of backup copies of the SBA application. According to the information we collected, backup copies are made at the following two levels:

- Database: backup of all databases in the IBM mainframe computer (including the SBA application) according to the following schedule:
 - weekly for all IBM application discs;
 - weekly and daily for databases and all logs;
 - weekly and incrementally for sequential files⁴;
- Application: daily backup of all SBA application data.

⁴ These are saved copies processed one after the other.

Apart from recovery on demand, the STI does not conduct regular recovery tests of the SBA application.

There are also global tests performed once a year on all IBM databases (including the SBA application), but these are done in the context of a computer contingency plan aimed primarily at restoring the services of the platform and its data, but not specifically for a set of data, such as the SBA application.

The absence of a formal procedure to manage backup copies of the SBA application and conduct regular recovery tests of SBA application data could have an impact on the ability to recover the system in a timely manner. This could result in the loss of data and time.

3.5.3.A. Recommendation

We recommend that the Service des technologies de l'information:

- Document the procedure for managing backup copies of the Système budgétaire automatisé application;
- Conduct regular recovery tests of backup copies of the Système budgétaire automatisé application.

4. Conclusion

The Système budgétaire automatisé (SBA) is the primary budget application of the Ville de Montréal (the City). This application, developed internally in the early 1990s, contains all the City's budget data (both revenues and expenditures). The 2021 operating budget is \$6.17B.

While there is a plan to begin to replace this outdated application in 2024, our recommendations will enable the City to offset the risks associated with the shortcomings we found until that time.

Based on our audit, we concluded that some control mechanisms need to be improved to mitigate the risks related to the confidentiality, integrity and availability of data in the SBA application:

- Roles and responsibilities are not adequately documented. In addition, the owner of the SBA application is not formally identified. Consequently, some tasks risk not being performed and others could have several persons managing them, which could lead to confusion, omissions and uneven actions taken to manage the application.
- Regarding access management, there is no formal procedure specific to the SBA application, password settings do not comply with the City's frameworks, and there is no logging or monitoring of access. The absence of these elements could increase the risk of changes being made to data by unauthorized persons.
- The lack of a formally documented change management procedure increases the risk of unauthorized and undesirable changes being made, which could have an impact on the integrity and availability of data and of the SBA application.
- In the absence of a formal succession plan for existing human resources and knowledge transfer, the SBA team may be unable to ensure sound management of the application, which could have an impact on the quality of services provided to users.

More specific details below are provided in terms of the evaluation criteria:

Evaluation Criterion – 1. Roles and Responsibilities

Roles and responsibilities and the owner of the SBA application are not formally identified using documentation such as a RACI (Responsible, Accountable, Consulted, Informed) matrix.

Evaluation Criterion – 2. Access Management

There is no formal procedure for managing access to the SBA application. The configuration of passwords does not comply with the City's new standard. Access is not logged or monitored in the SBA application.

However, access profiles are managed satisfactorily for this application. As well, the annual review and management of generic and highly privileged accounts are adequate.

Evaluation Criterion – 3. Change Management

There is no formal change management procedure. Requests for changes are not systematically documented. Where they are, they fail to follow the steps outlined below for implementing a change:

- Functional analyses by pilots and technical and impact analyses by developers;
- Approval by pilots and the division head;
- Development by the developer;
- Unit tests by developers, acceptance testing by pilots, and user-expert tests;
- Deployment by the production team at the STI.

Evaluation Criterion – 4. Human and Technical Continuity

Despite the fact that the availability of specialized human resources on the job market is a major issue for stakeholders, no succession plan for human resources and knowledge transfer has been developed. The SBA application, which dates from the 1990s, is facing technological obsolescence.

Evaluation Criterion – 5. Operations Management

The documentation regarding the operations management of the SBA application available to users and pilots is adequate.

Incident management is not subject to a formal procedure, and incidents are not systematically documented.

Backup copies of the SBA application are made regularly and systematically. However, no formal procedure exists for the management of backup copies specific to the SBA application, and periodic recovery tests are not performed on these backup copies.

5. Appendix

5.1. Objective and Evaluation Criteria

Objective

To determine whether the control mechanisms in place for the Système budgétaire automatisé (SBA) application ensure that it does not present any major risk to the confidentiality, integrity and availability of data.

Evaluation Criteria

1. Roles and Responsibilities

Roles and responsibilities are defined, approved and communicated, and provide clear accountability. The owner is formally identified.

2. Access Management

A procedure to create, modify, delete and revise access rights to the SBA application is properly documented. The application uses robust enough authentication settings to maintain a secure environment. The profiles and rights granted allow for adequate segregation of tasks to prevent unauthorized access and changes to data. Monitoring activities are in place to detect incidents in a timely manner.

3. Change Management

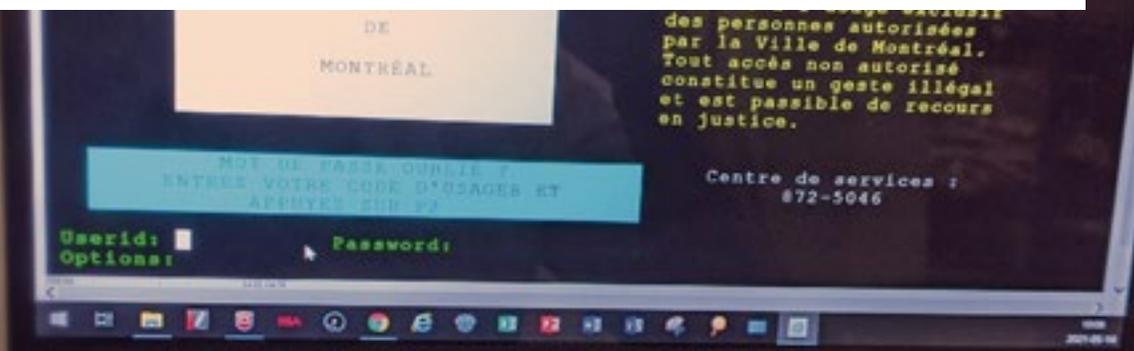
Production changes are properly documented, traced, tested and validated by the appropriate authorities. The access of programmers to the production environment is restricted and controlled.

4. Human and Technical Continuity

Updates are periodically conducted to ensure adequate technological development, qualified staff and sufficient succession throughout the life cycle of the application.

5. Operations Management

The application has documentation that minimizes operational risks. Each production incident is part of a unique ticket that retraces the origin, type and resolution of the problem. An action plan is associated with major problems and incidents. A backup plan is properly documented and followed. In addition, recovery tests on backup copies are performed on a regular basis.





5.

Logical Penetration Tests

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5. Logical Penetration Tests

5.1. Background

Several Ville de Montréal (the City) business units and some organizations controlled by the City have systems through which critical and confidential information passes.

To have effective security measures to adequately protect information systems against cyberattacks, the industry strongly recommends that logical penetration tests be used to test the strength of controls applied in various computer environments. According to information security experts, testing information systems' resistance to internal or external penetration attempts is a key issue.

Logical penetration tests simulate real attacks on technology infrastructures. To this end, they implement, in a controlled and secure replications of malicious steps taken by hackers to break into systems and networks, either from the Internet or internally, in order to better detect potential flaws in information systems, networks or software and strengthen information security. Unlike hacker penetration attempts, logical penetration tests are legal because the target entities provide their consent before testing is started. Specialists generally use the same tools and techniques as hackers do. The difference is that they do not damage information systems, make them unavailable, or alter the information handled by them and do not steal confidential information. The attacked systems' integrity, confidentiality and availability are maintained during tests.

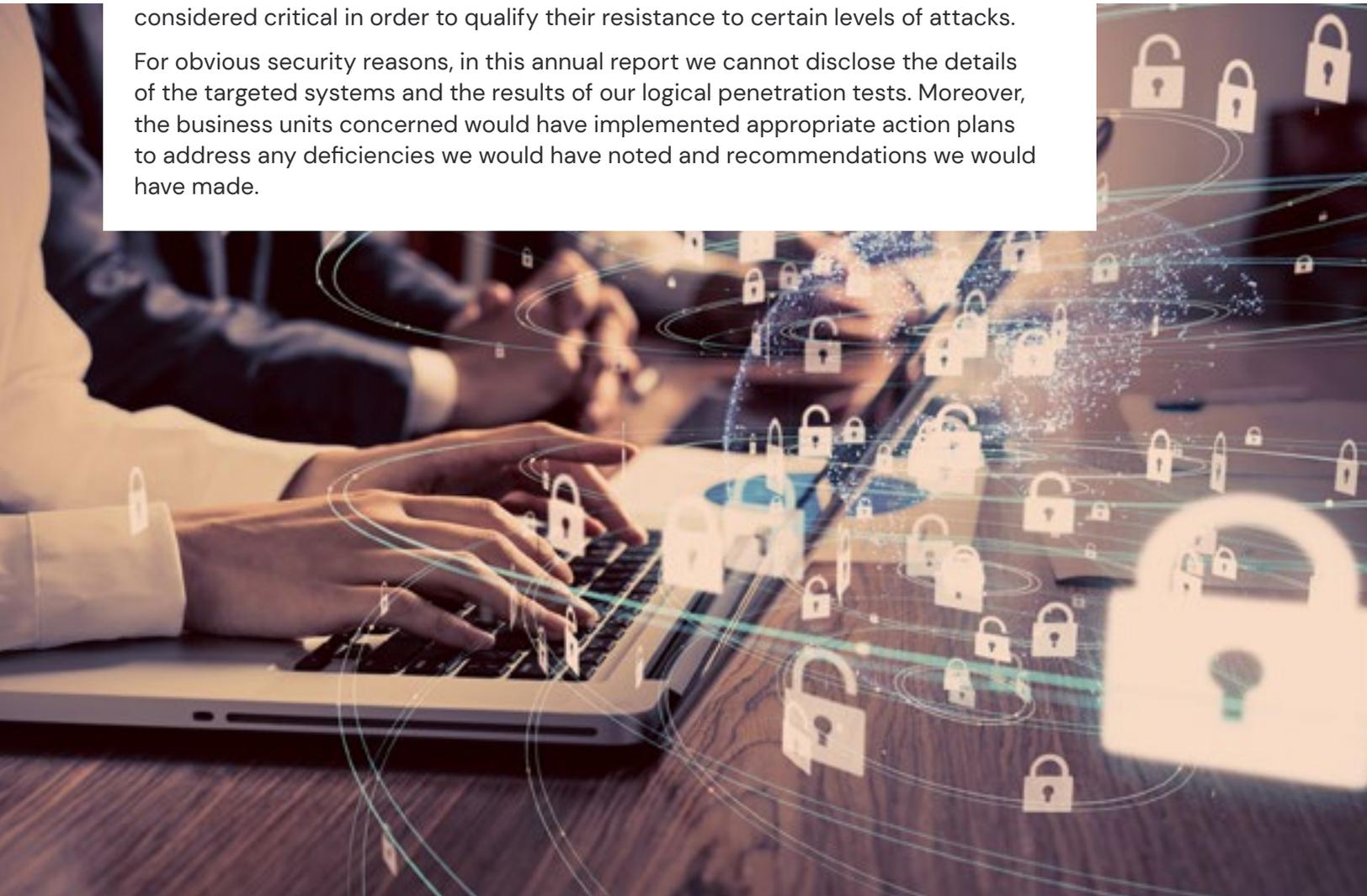
There are two main types of logical penetration tests:

- **External logical penetration tests:** they reveal whether a hacker could use the Internet to compromise the security of information systems to:
 - obtain confidential or privileged information;
 - alter the information handled by these systems;
 - make information systems unavailable.
- **Internal logical penetration tests:** they can determine whether a person could use the internal system with his usual access rights to compromise the security of the information systems and perform the same three actions defined for external tests. Internal testing is also used to access and test information systems that are invisible from the Internet.

5.2. Purpose and Scope of the Logical Penetration Tests

We performed two logical penetration testing missions tests throughout 2020. The main objective of these engagements was to test the security of IT environments considered critical in order to qualify their resistance to certain levels of attacks.

For obvious security reasons, in this annual report we cannot disclose the details of the targeted systems and the results of our logical penetration tests. Moreover, the business units concerned would have implemented appropriate action plans to address any deficiencies we would have noted and recommendations we would have made.





6.

Accountability

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6.1.

**Legal persons having
received a subsidy
of at least \$100,000
from the Ville
de Montréal**

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6.1. Legal persons having received a subsidy of at least \$100,000 from the Ville de Montréal

6.1.1. Legislative Framework Applicable to Legal Persons Having Received a Subsidy of at Least \$100,000

6.1.1.1. Background

In accordance with Section 107.9 of the Cities and Towns Act (CTA), “Any legal person receiving an annual subsidy of at least \$100,000 is required to have its financial statements audited.” This legal person’s auditor must provide the Auditor General with a copy of its annual financial statements, its report on these statements as well as any other report summarizing the auditor’s observations and recommendations to the board of directors or corporate officers of this legal person.

This auditor must also, when requested by the Auditor General, provide the latter with any document that relates to the audit work and its results, while also providing all information that the Auditor General considers necessary with regard to this audit work and its results. If the Auditor General considers that the information, explanations or documents obtained from the auditor are insufficient, he can arrange for any additional audit that he views as necessary.

In December 2013, the city council of the Ville de Montréal (the “City”) also adopted resolution CM13 1157, which requires, amongst other things, that legal persons that received a subsidy of at least \$100,000 file an annual report each year and that the officers make themselves available to city council for a plenary session, if required, pursuant to the *Règlement sur la procédure d’assemblée et les règles de régie interne du conseil municipal*.

Moreover, on October 23, 2020, a set of letters identifying the legal persons that received subsidies adding up to at least \$100,000 in 2019 was provided by the Direction générale to the business units concerned, asking them to provide it, as well as the Auditor General, with a copy of the audited financial statements of these legal persons.

6.1.1.2. Purpose and Scope

The purpose of this accountability was to ensure that the legal persons that had received subsidies totalling at least \$100,000 in 2019 complied with Section 107.9 of the CTA and to determine whether additional work was needed.

Thus, as a first step, we extracted all transactions included in the City's account titled "Contributions aux organismes" at December 31, 2019, to reconcile the amount reported in the 2019 financial statements with the amounts charged to the City's books. In addition, we reconciled the amounts identified for the legal persons included in the letters forwarded by the Direction générale on October 23, 2020, with the TOTAL contributions as per the City's 2019 financial statements. We also reconciled our differences, where applicable, with the list produced by the Direction générale.

Since we had not received all of the audited financial statements of the legal persons that had received subsidies of at least \$100,000 from the City, we sent letters to the business units responsible for following up with them on two occasions, on August 27 and December 9, 2020, as reminders.

We also, for selected legal persons, reviewed the audit performed by their auditor in support of their audited financial statements. Our sample consisted of six entities selected on the basis of various criteria, including the amounts of the subsidies and the nature of the projects for which subsidies were granted.

6.1.1.3. Audit Results

For the year ended December 31, 2019, the City recorded a TOTAL of \$190.6 million in subsidies to various legal persons. Of this amount, \$161.9 million (or 85%) concerned 243 legal persons that had received subsidies totalling at least \$100,000, which were subject to the requirements of Section 107.9 of the CTA and resolution CM13 1157 adopted by city council.

Considering the current public health crisis, we stopped our follow-up belatedly this year, i.e., on February 12, 2021. As of that date, the Bureau du vérificateur général (BVG) had received the 2019 audited financial statements of 242 (or 99.6%) of the 243 entities concerned by this requirement of the CTA, for a TOTAL of \$161.7 million.

Only one entity, which had received \$204,300, had not met the requirements of the CTA and resolution CM13 1157, having ceased its operations during the course of 2019.

For the six entities selected, following the review of the auditors' files as well as the information, explanations and documents obtained, no further verification was deemed necessary, with the exception of the Musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière, for which our work is presented in Chapter 3. This entity was selected based on the amounts it received in contributions from the City in recent years. The entities making up our sample are presented in Table 1.

TABLE 1

List of Entities Making Up Our Sample

Entity	Year-end	Amount received
Musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière	December 31, 2019	\$13,155,265
Société du patrimoine Angus	August 31, 2019	\$10,724,617
Habitations communautaires Duff Court	May 31, 2019	\$3,719,269
Association sportive et communautaire du Centre-Sud	April 30, 2019	\$1,791,228
UTILE Angus	December 31, 2019	\$1,051,170
L'Anonyme UIM	March 31, 2019	\$778,379
Total		\$31,219,928

FINDINGS

In the course of our work, in order to report on the legal persons that had received subsidies of at least \$100,000 from the City, we identified a few elements that could be improved.

Letters to the Business Units

Most of the agreements signed by the entities include a clause requiring the filing of audited financial statements within 90 days of their fiscal year end. However, the letters to the business units responsible for following up with the legal persons concerned were sent by the Direction générale late, i.e., on October 23, 2020. In order to ensure better monitoring of the clauses of the contribution agreement and an appropriate level of accountability, these letters should be sent earlier.

6.1.A. Recommendation

We recommend that the Direction générale revise its schedule for sending follow-up letters to the business units to ensure better monitoring of compliance with the clauses of the subsidy contribution agreement and an appropriate level of accountability.

List of Legal Persons Produced by the Direction générale

We found that the list produced by the Direction générale was not always comprehensive as it does not reflect accounting entries charged to the City's "Contributions aux organismes" account as of December 31, 2019. They are not broken down by individual recipient legal person and instead include a grouping of legal persons. Also, the Direction générale does not reconcile the amounts with the book balances to ensure that the list is complete.

The Direction générale should review the mechanisms in place to ensure the completeness of both the amounts paid and the list of legal persons that received these subsidies. This will enable it to protect itself against any oversights when sending letters to the business units, allowing them to follow up with the legal persons regarding the application of the provisions of Section 107.9 of the CTA and of resolution CM13 1157.

6.1.B. Recommendation

We recommend that the Direction générale both consider journal entries when creating the list of the legal persons that received subsidies of at least \$100,000 and reconcile such lists with the book balances to ensure completeness of the amounts granted to each legal person.

6.1.1.4. Detailed Table – Legal Compliance of Organizations Having Received a Subsidy of at Least \$100,000 in 2019

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Société de Développement Commercial District Central	\$687,285	X		
S.I.D.A.C. La Promenade Fleury	\$445,559	X		
Prévention du Crime Ahuntsic – Cartierville	\$221,126	X		
Service des Loisirs Sts-Martyrs-Canadiens de Montréal	\$163,395	X		
Loisirs de l'Acadie Montréal	\$161,703	X		
Solidarité Ahuntsic	\$158,510	X		
Société de Développement Commercial Quartier Fleury Ouest	\$143,964	X		
TOTAL Ahuntsic-Cartierville borough	\$1,981,542	7	0	0
Loisirs Sportifs Côte-des-Neiges – Notre-Dame-de-Grâce	\$1,221,208	X		
Société Environnementale Côte-des-Neiges	\$572,251	X		
Prévention Côte-des-Neiges Notre-Dame-De-Grace	\$388,647	X		
Corporation de Développement Communautaire de Côte-des-Neiges	\$359,896	X		
Comité Jeunesse de Notre-Dame-de-Grâce	\$239,642	X		
Centre Communautaire de Loisir de la Côte-des-Neiges	\$212,001	X		
Conseil Communautaire Notre-Dame-de-Grâce Inc.	\$157,576	X		
Centre Communautaire Mountain Sights	\$133,355	X		
Société de Développement Commercial Expérience Côte-des-Neiges	\$130,000	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Maison des Jeunes Côte-des-Neiges Inc.	\$117,405	X		
Association pour le Développement Jeunesse de Loyola	\$101,435	X		
TOTAL Côte-des-Neiges-Notre-Dame-de-Grâce borough	\$3,633,417	11	0	0
Festival de Théâtre de Rue de Lachine	\$115,000	X		
La Maison des Jeunes l'Escalier de Lachine Inc.	\$113,592	X		
TOTAL Lachine borough	\$228,592	2	0	0
Héritage Laurentien	\$335,556	X		
Centre Culturel et Communautaire Henri-Lemieux	\$293,500	X		
Société de La Salle Jean-Grimaldi	\$103,166	X		
TOTAL LaSalle borough	\$732,222	3	0	0
Société de Développement Commercial Hochelaga-Maisonneuve	\$1,084,553	X		
CCSE Maisonneuve	\$535,956	X		
Hockey Québec - Région de Montréal	\$251,422	X		
Comité Musique Maisonneuve Inc	\$204,880	X		
L'Antre-Jeunes de Mercier-Est	\$204,469	X		
Centre Communautaire Hochelaga (C.C.H.)	\$163,411	X		
La Maison des Jeunes Magi de Mercier-Ouest Inc.	\$162,263	X		
Service des Loisirs Ste-Claire	\$155,782	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Mercier-Ouest Quartier en Santé	\$149,943	X		
GCC La Violence!	\$137,422	X		
Service des Loisirs St-Fabien	\$123,228	X		
Club Aquatique de l'Est de Montréal	\$112,716	X		
Association Régionale de Soccer Concordia Inc.	\$109,140	X		
TOTAL Mercier-Hochelaga-Maisonneuve borough	\$3,395,185	13	0	0
Corporation de Développement Économique (Cdec) Montréal-Nord	\$426,000	X		
Les Fourchettes de l'Espoir	\$288,318	X		
Un Itinéraire pour Tous	\$235,494	X		
Éconord	\$216,572	X		
Programme Horizon Jeunesse	\$204,300			X
Centre des Jeunes l'Escale de Montréal-Nord Inc.	\$156,908	X		
Institut Pacifique	\$120,346	X		
TOTAL Montréal-Nord borough	\$1,647,937	6	0	1
Centre du Plateau	\$252,859	X		
Relance des Loisirs Tout 9 Inc.	\$200,523	X		
Société de Développement Commercial Laurier Ouest Plateau-Mont-Royal	\$166,452	X		
TOTAL Plateau-Mont-Royal borough	\$619,834	3	0	0
Société Ressources-Loisirs de Pointe-Aux-Trembles	\$937,654	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Équipe R.D.P.	\$281,278	X		
Éco de la Pointe-Aux-Prairies	\$216,288	X		
Maison des Jeunes de Pointe-Aux-Trembles	\$216,118	X		
Loisir Communautaire le Relais du Bout	\$185,106	X		
TOTAL Rivière-des-Prairies-Pointe-aux-Trembles borough	\$1,836,444	5	0	0
Nature-Action Québec Inc.	\$548,922	X		
Société Développement Commercial Petite Italie-Marché Jean-Talon-Montréal	\$315,148	X		
Loisirs Récréatifs et Communautaires de Rosemont	\$232,907	X		
Y'a Quelqu'un l'Aut'Bord du Mur Inc.	\$227,500	X		
Les Loisirs du Centre Père-Marquette Inc.	\$204,436	X		
Service des Loisirs Angus-Bourbonnière	\$172,694	X		
Centre d'Écologie Urbaine de Montréal	\$155,390	X		
Carrefour Communautaire de Rosemont, L'Entre-Gens Inc. (Centre Communautaire Petite-Côte)	\$139,346	X		
SIDAC Plaza Saint-Hubert	\$106,892	X		
L'Hôte Maison (Maison de Jeunes)	\$105,390	X		
TOTAL Rosemont-La Petite-Patrie borough	\$2,208,624	10	0	0
Développement Économique Saint-Laurent	\$1,110,600	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
VertCité	\$329,276	X		
Centre D'Initiatives pour le Développement Communautaire - l'Unité	\$110,160	X		
TOTAL Saint-Laurent borough	\$1,550,036	3	0	0
Société de Développement Commercial de la Rue Jean-Talon à Saint-Léonard	\$356,226	X		
TOTAL Saint-Léonard borough	\$356,226	1	0	0
SIDAC Plaza Monk	\$1,198,907	X		
Centre Sportif de la Petite-Bourgogne	\$400,980	X		
Centre de Loisirs Monseigneur Pigeon	\$374,663	X		
Centre Récréatif Culturel et Sportif St-Zotique Inc.	\$207,341	X		
Village de Noël de Montréal	\$135,761	X		
Club Aquatique du Sud-Ouest (C.A.S.O.)	\$124,289	X		
Loisirs & Culture Sud-Ouest	\$100,118	X		
La Pépinière Espaces Collectifs	\$100,000	X		
TOTAL Sud-Ouest borough	\$2,642,060	8	0	0
Société de Développement Commercial Wellington	\$679,438	X		
Action Prévention Verdun	\$253,781	X		
MU	\$241,706	X		
TOTAL Verdun borough	\$1,174,925	3	0	0
Société de Développement Commercial Destination Centre-Ville	\$4,780,323	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Société de Développement Commercial du Vieux-Montréal-Quartier Historique	\$2,561,835	X		
Association Sportive et Communautaire du Centre-Sud Inc.	\$1,791,288	X		
Société de Développement Commercial du Village	\$1,151,487	X		
Société de Développement du Quartier Latin	\$721,684	X		
Expérience Centre-Ville	\$700,000	X		
SIDAC Promenade Masson	\$487,628	X		
Corporation du Centre Jean-Claude Malépart	\$439,262	X		
Espace Saint-Denis Quartier Latin	\$273,279	X		
Sentier Urbain	\$247,250	X		
Société Écocitoyenne de Montréal	\$221,125	X		
Société pour l'Action l'Éducation et la Sensibilisation Environnementale de Montréal	\$212,073	X		
Go jeunesse	\$167,345	X		
Les 7 doigts de la Main	\$161,055	X		
Service à la Famille Chinoise du Grand Montréal Inc.	\$150,000	X		
Centre Récréatif Poupart Inc.	\$120,988	X		
Le Sac à Dos	\$106,857	X		
Association les Chemins du Soleil	\$103,548	X		
TOTAL Ville-Marie borough	\$14,397,027	18	0	0

Le Patro le Prévost \$611,234 X

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Centre de Loisirs Communautaires Lajeunesse Inc.	\$391,714	X		
La Grande Porte	\$158,897	X		
Loisirs Communautaires Saint-Michel	\$146,917	X		
Espace Multisoleil	\$126,328	X		
Corporation de Gestion des Loisirs du Parc	\$123,358	X		
Centre Communautaire Jeunesse Unie de Parc Extension	\$117,660	X		
L'Organisation des Jeunes de Parc-Extension Inc. (Peyo)	\$116,430	X		
TOTAL Villeray-St-Michel-Parc-Extension borough	\$1,792,538	8	0	0

Société du Musée D'Archéologie et d'Histoire de Montréal Pointe-À-Callière	\$13,155,265	X		
Partenariat du Quartier des Spectacles	\$3,992,400	X		
TOHU	\$1,195,198	X		
Le Festival International de Jazz de Montréal Inc.	\$706,790	X		
Festival Juste pour Rire	\$600,000	X		
Festival Montréal en Lumière Inc.	\$600,000	X		
Montréal en Histoire	\$454,499	X		
Festival Transamériques	\$404,097	X		
Fierté Montréal	\$387,980	X		
Vitrine Culturelle de Montréal	\$350,000	X		
Les Francolies de Montréal Inc.	\$335,000	X		
Musée des Hospitalières Hôtel-Dieu de Montréal	\$267,000	X		
Centre Canadien d'Architecture	\$225,700	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
MAI (Montréal, Arts Interculturels)	\$219,800	X		
Festival du Nouveau Cinéma de Montréal	\$205,805	X		
Nuit Blanche à Montréal Inc	\$200,000	X		
Société des Musées de Montréal	\$176,600	X		
Société du Château Dufresne	\$168,785	X		
Montréal en fêtes	\$165,000	X		
Fondation Québec Cinéma	\$153,364	X		
Bureau du Cinéma et de la Télévision du Québec	\$147,000	X		
Festival Mode & Design Montréal	\$135,000	X		
Les Productions Nuits d'Afrique Inc.	\$121,680	X		
Vélo Québec Événements	\$120,000	X		
L'Auguste Théâtre	\$115,000	X		
Comité de la Fête Nationale de la Saint-Jean Inc.	\$105,000	X		
Terres en Vues, Société pour la Diffusion de la Culture Autochtone	\$103,264	X		
Concours Musical International de Montréal	\$100,000	X		
Culture Montréal	\$100,000	X		
Cinéma Beaubien	\$100,000	X		
Festival Fantasia	\$100,000	X		
TOTAL Service de la culture	\$25,210,227	31	0	0
Société du Patrimoine Angus	\$10,724,617	X		
PME MTL Centre-Ville	\$6,551,035	X		
PME MTL Centre-Est	\$5,264,975	X		
PME MTL Centre-Ouest	\$3,582,454	X		
PME MTL Grand Sud-Ouest	\$3,386,507	X		
PME MTL West-Island	\$3,352,982	X		
PME MTL Est-de-L'Île	\$3,082,025	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Concertation Régionale de Montréal	\$2,100,650	X		
Oratoire Saint-Joseph du Mont-Royal	\$2,000,000	X		
Carrefour du Plateau Mont-Royal	\$1,362,302	X		
Société de Développement Commercial du Boulevard St-Laurent	\$1,188,276	X		
Office des Congrès et du Tourisme du Grand Montréal	\$930,000	X		
Société de Développement Commercial les Quartiers Du Canal	\$595,286	X		
C2.MTL	\$480,000	X		
SDC Pignons Rue Saint-Denis	\$433,063	X		
Fondation du Startup de Montréal	\$400,000	X		
Expo Entrepreneurs	\$375,000	X		
S.A.T. Société des Arts Technologiques	\$352,590	X		
Société du Quartier de l'Innovation de Montréal	\$300,000	X		
Association des Gens d'Affaires de la Rue Charlevoix et de Pie IX	\$278,000	X		
École de Créativité la Factory	\$275,000	X		
École des Entrepreneurs	\$267,000	X		
L'Île du Savoir Inc.	\$255,000	X		
Université Concordia	\$240,000	X		
Printemps Numérique	\$225,000	X		
Société de Développement Commercial la Zone Décarie Nord	\$212,919	X		
Esplanade Montréal	\$195,000	X		
Conseil des Industries Durables	\$180,000	X		
Partageons l'Espoir (Québec)	\$152,533	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Regroupement des Producteurs Multimédia	\$150,000	X		
Voyagez Futé	\$150,000	X		
Fusion Jeunesse	\$134,863	X		
Institut International d'études Administratives de Montréal Inc.	\$130,000	X		
Société de Développement Commercial Laurier Ouest - Outremont	\$112,117	X		
Building owners and managers' association of Montreal (Boma Québec)	\$100,000	X		
TOTAL Service du développement économique	\$49,519,193	35	0	0
Montréal International	\$510,000	X		
Centraide du Grand Montréal	\$277,300	X		
Maison du Développement Durable	\$150,000	X		
Groupe de Recherche Appliquée en Macroécologie (GRAME)	\$102,500	X		
TOTAL Direction générale	\$1,039,800	4	0	0
Altergo	\$835,835	X		
Fondation du Dr. Julien	\$600,000	X		
Centre de Prévention de la Radicalisation Menant à la Violence	\$600,000	X		
Jeunesse au Soleil Incorporée	\$495,600	X		
Les YMCA du Québec	\$454,420	X		
Comité des Organismes Sociaux de Saint-Laurent	\$447,599	X		
Club des Petits Déjeuners du Canada	\$350,000	X		
Table de Quartier Hochelaga-Maisonneuve	\$323,582	X		

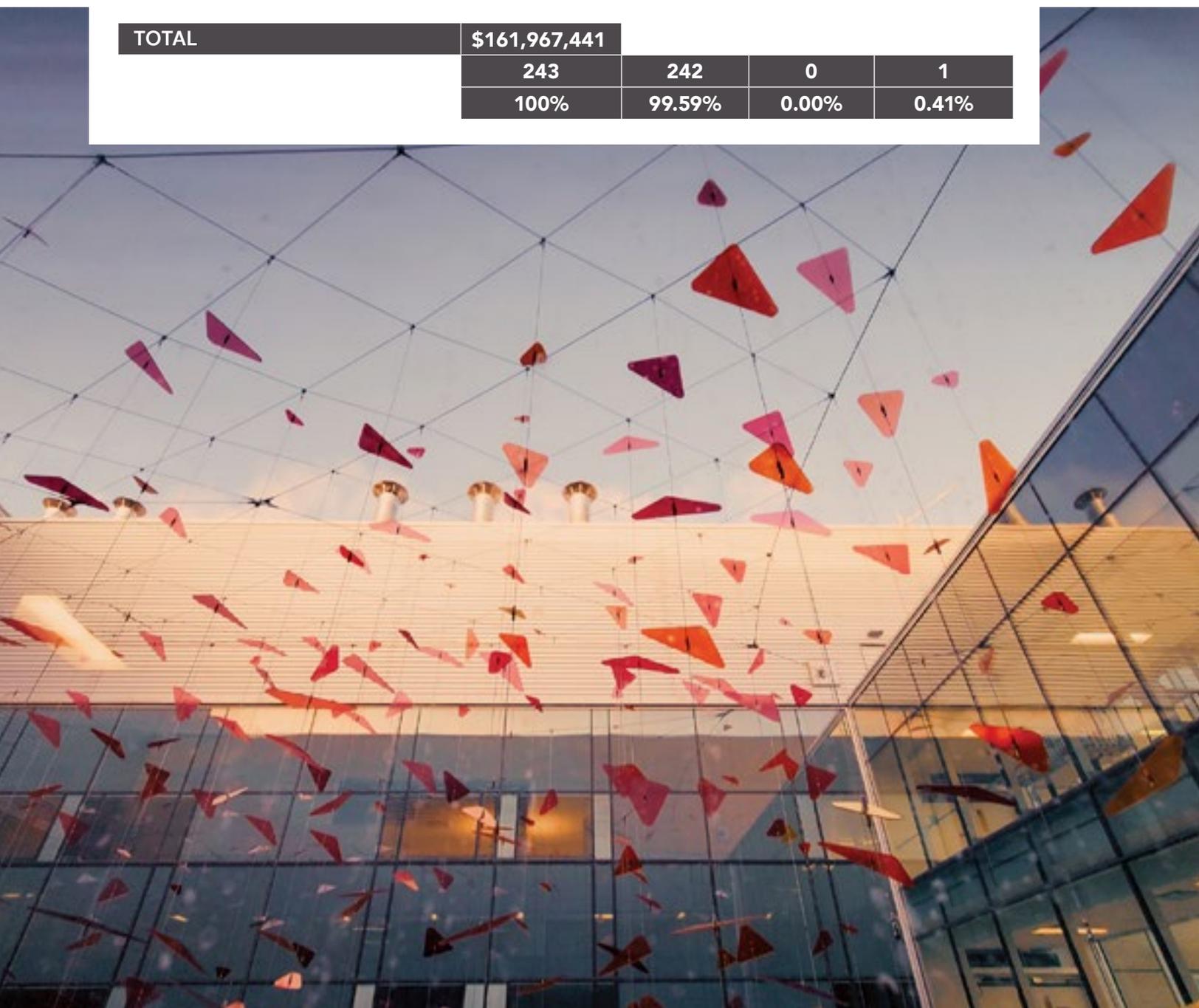
Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Intégration Jeunesse du Québec Inc.	\$279,722	X		
Société de Développement Social	\$271,398	X		
Prévention Sud-Ouest	\$269,004	X		
Action Jeunesse de l'Ouest-de-l'Île	\$258,530	X		
Table de Quartier de Montréal-Nord	\$254,478	X		
Mission Old Brewery	\$243,396	X		
Vivre Saint-Michel en Santé	\$235,232	X		
Carrefour de Ressources en Interculturel	\$231,943	X		
Concertation Saint-Léonard	\$227,458	X		
Foyer pour Femmes Autochtones de Montréal	\$223,766	X		
Corporation de Développement Communautaire (CDC) Centre-Sud	\$212,249	X		
CDC Solidarités Villeray	\$208,307	X		
Rue Action Prévention Jeunesse	\$208,089	X		
Accueil Bonneau Inc.	\$202,566	X		
Solidarité Mercier-Est	\$198,764	X		
Y a des femmes de Montréal	\$198,059	X		
Dépôt Alimentaire Ndg	\$196,209	X		
Moisson Montréal Inc.	\$196,000	X		
Concertation Ville Émard Côte St-Paul	\$189,940	X		
Entre-Maisons Ahuntsic	\$178,674	X		
Table de Développement Social de Lasalle	\$173,086	X		
La Mission Bon Accueil	\$171,900	X		
Maison de Jeunes de Lasalle	\$158,102	X		
Regroupement des Magasins-Partage de l'Île de Montréal	\$158,000	X		
ATSA	\$157,601	X		

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Rue des Femmes de Montréal (La)	\$150,190	X		
Maison Du Père	\$150,000	X		
Bienvenue à Notre-Dame-de-Grâce	\$149,375	X		
Café-Jeunesse Multiculturel	\$143,500	X		
Conseil Local Intervenants Communautaires Bordeaux-Cartierville (C.L.I.C.)	\$143,026	X		
Projet Ado Communautaire en Travail de Rue	\$131,591	X		
Ensemble pour le respect de la Diversité	\$129,962	X		
Mission Exeko	\$126,501	X		
Comité de Revitalisation Urbaine Intégrée du Quartier Saint-Pierre	\$117,818	X		
Mouvement pour Mettre Fin à l'itinérance à Montréal	\$115,000	X		
Accueils au Cœur de l'Enfance	\$111,001	X		
Services de Soutien à la Famille Hay Doun	\$110,000	X		
Coup de Pouce Jeunesse de Montréal-Nord	\$108,150	X		
Forum Jeunesse de Saint-Michel	\$103,285	X		
Corporation Développement Communautaire de Rosemont Inc.	\$100,393	X		
TOTAL Service de la diversité sociale et des sports	\$11,299,302	48	0	0
Institut de Recherche en Biologie Végétale de Montréal	\$295,000	X		
Fondation Espace pour La Vie	\$250,000	X		
TOTAL Espace pour la vie	\$545,000	2	0	0

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Tennis Canada–Stade Jarry	\$1,745,417	X		
LA Société de Verdissement du Montréal Métropolitain (Soverdi)	\$1,503,765	X		
Événements GPCQM	\$1,250,000	X		
Fabrique de la paroisse Notre-Dame de Montréal	\$481,253	X		
Ville de Westmount	\$441,967	X		
Triathlon International de Montréal	\$431,735	X		
Patinage Canada	\$400,000	X		
Judo Canada	\$397,000	X		
Centre de la Montagne	\$386,000	X		
Excellence Sportive de l'Île de Montréal	\$325,690	X		
Sports Montréal Inc.	\$106,056	X		
TOTAL Service des grands parcs, du Mont-Royal et des sports	\$7,468,884	11	0	0
Les Habitations Duff Court	\$3,719,269	X		
Utile Angus	\$1,051,170	X		
L'Anonyme U.I.M.	\$778,379	X		
Les Habitations Olympia	\$613,892	X		
Les Habitations du Trentenaire de la Shapem	\$540,981	X		
Unité de Travail pour l'Implantation de Logement Étudiant (Utile Papineau)	\$167,922	X		
TOTAL Service de l'habitation	\$6,871,613	6	0	0
École Polytechnique Montréal	\$481,253	X		
Regroupement des Éco-Quartiers	\$168,902	X		
TOTAL Service de l'eau	\$650,156	2	0	0

Organization	Amount received in 2019	Compliant	Audited financial statements	
			Non-compliant	Financial statements not received
Université de Montréal	\$21,024,159	X		
Vélo Québec Association	\$142,500	X		
TOTAL Service de l'urbanisme et de la mobilité	\$21,166,659	2	0	0

TOTAL	\$161,967,441			
	243	242	0	1
	100%	99.59%	0.00%	0.41%





6.2.

Implementation of the Auditor General's Recommendations

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6.2. Implementation of the Auditor General's Recommendations

The percentage of recommendations made by the Bureau du vérificateur général (BVG) that have led to concrete measures is an essential indicator in ensuring that central departments and boroughs implement their recommendations.

The BVG's policy is to follow up on the recommendations in the year following their publication in the annual report.

In 2019, the Comptroller General of the Ville de Montréal (the City) issued automated reminders of timelines and overdue notices to follow up on the actions taken by business units, in order to encourage them to implement their action plans as promptly as possible. The Audit Committee also introduced measures to encourage acting on the recommendations by convening meetings with business units that were slow to act.

In 2020, the Comptroller General put new measures in place, including the requirement that business units obtain approval from the Direction générale to alter the initial action plan or the deadline; deferral of this deadline was to be requested only in exceptional cases and could not exceed an additional period of 12 months. A coordinator was also identified for each business unit to exercise quality control by ensuring that the response provided by the person responsible for implementing the recommendation was sufficiently precise, aligned with the action plan and substantiated by supporting documents. Training for these coordinators started at the end of 2020. At the time of publishing our annual report, not all the coordinators had received training yet.

The BVG, after reviewing some of these practices, committed to a monthly follow-up of the recommendations that were considered resolved by the entities. In addition, the period granted to business units for producing their action plans following an audit engagement was extended to three months, thereby allowing business units to better coordinate their efforts in developing action plans when they are required to work closely together to respond to a recommendation.

This means that action plans no longer appear in the BVG's annual report. On the other hand, when business units receive the audit report, they must notify the BVG in writing that they agree with the recommendations made, thereby providing the BVG with assurance that the business units in question will adopt an action plan for each recommendation.

As part of the follow-up on the implementation of the BVG's recommendations, the results of this annual report were compiled as of February 28, 2021.

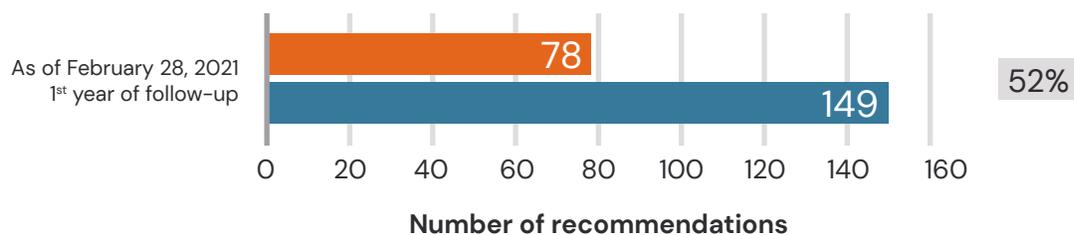
6.2.1. Results of Follow-up on Recommendations: Performance, Compliance and Information Technologies Audit

The purpose of our audit, in addition to noting progress made over time in implementing the recommendations, is to ensure that business units undertake measures to implement the action plans that they had planned, in accordance with the scheduled implementation dates. It should be noted that it is the business units' responsibility to decide upon implementation dates. In this regard, business units are expected to respond to the BVG's recommendations while monitoring the implementation of their action plans for these recommendations in a timely manner.

According to the action plans of business units for the 2017, 2018 and 2019 recommendations, the projected implementation periods ranged from 0 to a little more than 36 months. Figures 1 to 3 present changes in the number of recommendations over time that the BVG has confirmed to be resolved, and the percentage this represents, based on the completion schedule initially planned by the different business units in question, of recommendations they planned to implement. A resolved status is confirmed by the BVG when it obtains evidence showing that the projected action plan was implemented in its entirety by the business unit.

FIGURE 1

Percentage of Recommendations Made in the 2019 Annual Report and Provided for by Business Units in Their Initial Action Plans That Were Resolved



- Number of recommendations resolved according to the Bureau du vérificateur général
- Number of recommendations to be resolved according to initial action plans provided by business units

FIGURE 2

Percentage of Recommendations Made in the 2018 Annual Report and Provided for by Business Units in Their Initial Action Plans That Were Resolved

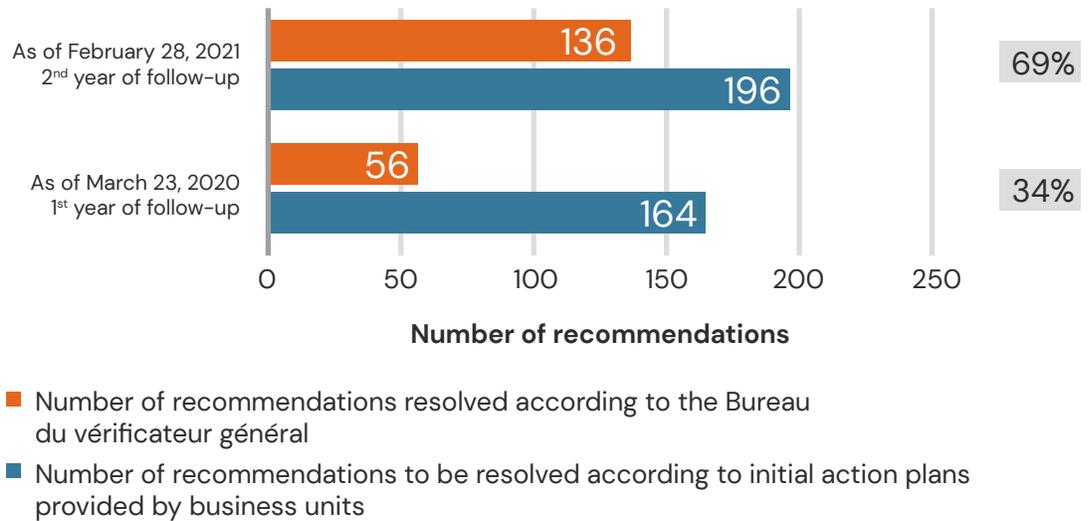
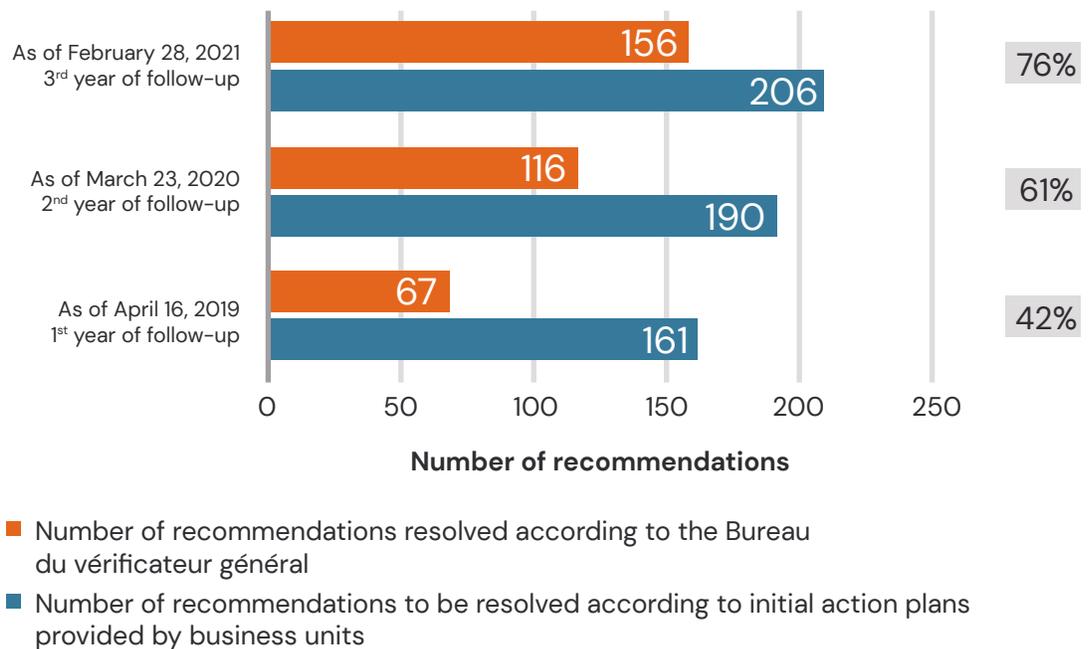


FIGURE 3

Percentage of Recommendations Made in the 2017 Annual Report and Provided for by Business Units in Their Initial Action Plans That Were Resolved



We noted that as of February 28, 2021, 52% of the recommendations that business units provided for in their initial action plans had been resolved at the time of the first follow-up. This represents an improvement over previous years (34% for 2018 and 42% for 2017).

“To Be Implemented” Status

We also noted that 13 recommendations dating from 2016 to 2019 for which the initial deadline for implementation planned by business units was exceeded still have a “to be implemented” status, indicating that, as of February 28, 2021, no action had been taken by the business units in question. In other words, as of February 28, 2021, the recommendations should have been resolved, whereas in fact, the business units had not yet begun to implement their action plans. Note that this accounts for 14% of all the recommendations with a “to be implemented” status (13/93).

Recommendations Maintained “In-Progress”

Furthermore, 148 recommendations that were followed up on during the 2020 fiscal year and that business units had considered to be resolved had to be maintained “in progress” by the BVG, either because the business units were not able to provide evidence of the measures they had taken, or because the measures put in place did not correspond to the recommendations or action plans submitted by business units following the audit reports. This means that 24% of the recommendations that business units said were resolved reverted to “in-progress” status (148/627).

Old Recommendations¹

Finally, the deadlines for 48 recommendations for which the business units had decided upon initial action plans and that still had an “in progress” or “deferred” status as of February 28, 2021, had expired five or more years before and, in some cases, even ten years before.

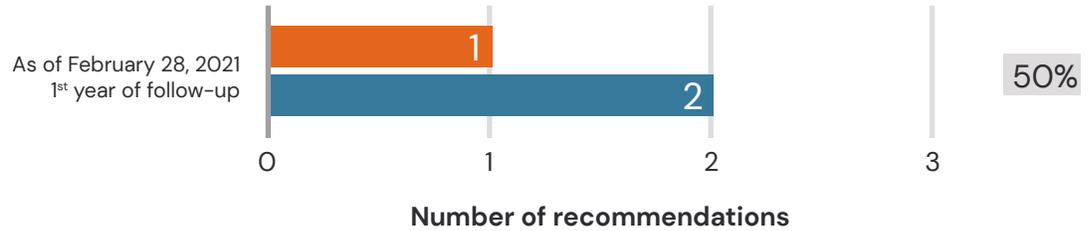
6.2.2. Results of Follow-up on Recommendations: Financial Audit

According to the action plans of business units for the 2017, 2018 and 2019 recommendations, Figures 4 to 6 present changes in the number of recommendations over time that the BVG has confirmed to be resolved and the percentage this represents, based on the completion schedule initially planned by the different business units in question, of recommendations they planned to implement.

¹ Initial action plan whose completion determined by the business unit was scheduled for December 31, 2015, or an earlier date.

FIGURE 4

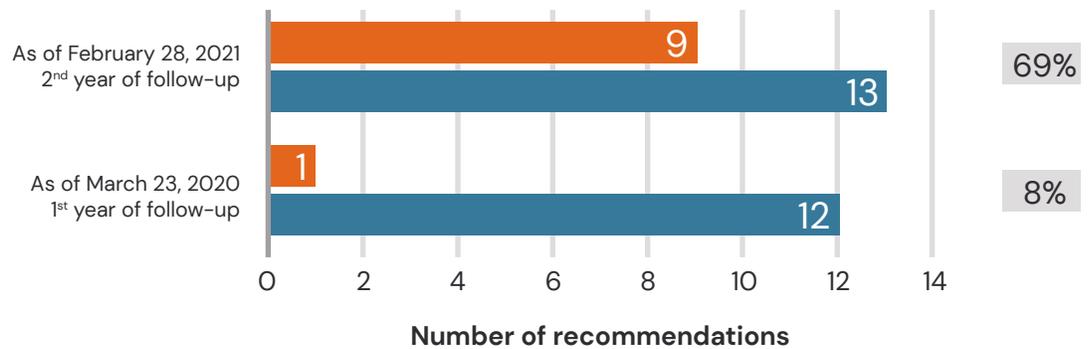
Percentage of Recommendations Made in the 2019 Annual Report and Provided for by Business Units in Their Initial Action Plans That Were Resolved



- Number of recommendations resolved according to the Bureau du vérificateur général
- Number of recommendations to be resolved according to initial action plans provided by business units

FIGURE 5

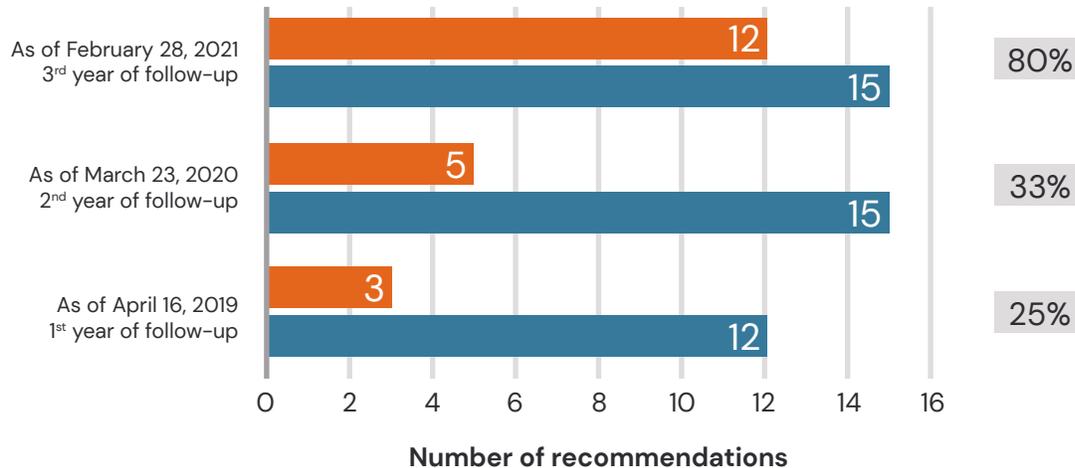
Percentage of Recommendations Made in the 2018 Annual Report and Provided for by Business Units in Their Initial Action Plans That Were Resolved



- Number of recommendations resolved according to the Bureau du vérificateur général
- Number of recommendations to be resolved according to initial action plans provided by business units

FIGURE 6

Percentage of Recommendations Made in the 2017 Annual Report and Provided for by Business Units in Their Initial Action Plans That Were Resolved



- Number of recommendations resolved according to the Bureau du vérificateur général
- Number of recommendations to be resolved according to initial action plans provided by business units

We noted that, as of February 28, 2021, 50% of the recommendations that business units provided for in their initial action plans had been resolved at the time of the first follow-up, while the rate was 8% and 25% for the recommendations made in 2018 and 2017, respectively. Although the number of recommendations concerned is low, we note an improvement.

6.2.3. Conclusion

In the course of the present fiscal year, the BVG followed up on 664 recommendations—627 recommendations made as a result of performance, compliance and information technology audits, and 37 recommendations made as a result of financial audits. The mechanisms put in place by the Comptroller General (reminders and overdue notices), as well as the monitoring undertaken by the Audit Committee, surely helped raise the percentage of recommendations implemented during the same period, as compared with the implementation rate provided for by business units in their initial action plans (Figures 1 to 6).

In our opinion, adequate monitoring by coordinators can help improve the effectiveness of follow-up on recommendations for which the “resolved” status had to be maintained to “in progress” by the BVG and recommendations with a “to be implemented” status for which the implementation deadline agreed upon in the initial action plan has expired, including cases where the deadline expired more than five years ago. We reiterate that training for these coordinators was made available only at the end of 2020.

Since each follow-up mechanism can have different objectives, we recommend that the Direction générale introduce performance indicators for the purpose of assessing the extent to which the follow-up mechanisms introduced are yielding results.





7.

Management Reports

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7.1.

Overview of the Bureau du vérificateur général

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7.1. Overview of the Bureau du vérificateur général

This chapter presents the highlights of the results obtained for the year 2020 regarding the performance of the Auditor General's (AG) mandate and the utilization of resources for this purpose. More specifically, we present different indicators so the reader can appreciate the performance of the Bureau du vérificateur général (BVG).

The indicators presented are:

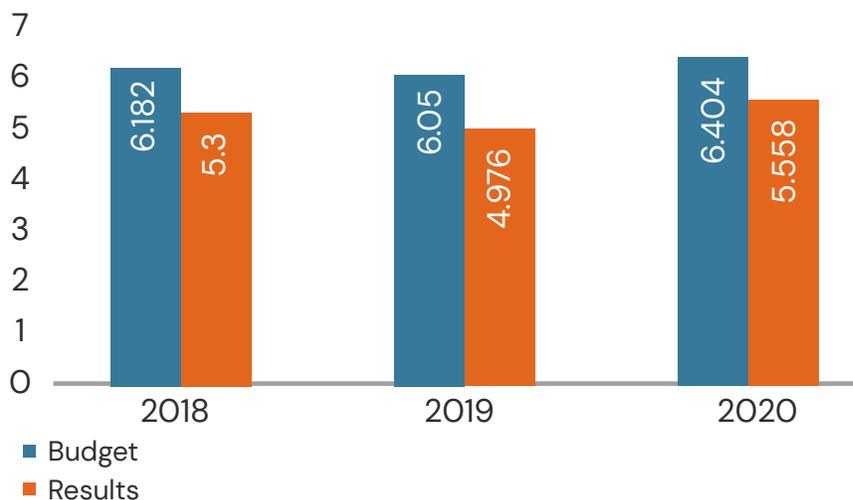
- The financial results;
- The number of audit reports issued;
- Human resources:
 - Current and future staff portrait;
 - Use of time;
 - Staff turnover rate;
 - Absenteeism rate;
 - Average number of hours and cost of training;
 - Equal access to employment;
- Professional service contracts;
- Professional inspection;
- Accountability regarding allegations;
- Accountability regarding requests for access to information;
- Technology infrastructure;
- Outreach.

7.1.1. Financial Results

For the year 2020, the BVG's operating expenses amounted to \$5.6 million, compared with the budget of \$6.4 million. This favourable variance is essentially explained by personnel movements, i.e., positions that remained vacant and were filled during the year 2020, employee sick leaves, and the retirement of four resources. However, in the second half of 2020, we filled four positions with external resources, namely two senior performance and compliance auditor positions, one information technology (IT) audit consultant and one administrative assistant. In addition, in August 2020, an employee of the BVG was promoted to deputy auditor-general (DAG) responsible for performance and compliance audits. The following figure illustrates the BVG's financial results for the past three years.

FIGURE 1

Budget and Financial Results (in millions of dollars)



In accordance with the provisions of section 108.2.1 of the *Cities and Towns Act* (the CTA), the AG accounts for the year ended December 31, 2020, were audited by an independent auditor mandated by the Ville de Montréal (the City). The report of the independent auditor is presented in Appendix 8.2.

7.1.2. Number of Audit Reports Issued

Next Table details the number of reports issued over the past few years for audits of the financial statements, regulatory compliance, as well as a performance and compliance audit and IT.

TABLE 1**Number of Audit and Accountability Reports Produced from 2018 to 2020**

Reference Annual report	Financial statements	Performance and compliance audit	Information technology audit	Total number of audit reports	Accountability
2018	9	7	4	20	2
2019	9	6	4	19	2
2020	9	7	5	21	2

7.1.3. Human Resources

The BVG is recognized for the quality of its work and the diversity of its skills and experience. This is a major asset in providing elected officials and citizens with an objective and independent view of how well public funds are managed. The BVG employs approximately 30 qualified professionals, including accountants, an engineer and business management and IT specialists. The BVG's employees hold a variety of certifications, such as public accounting (CPA), financial auditing (CPA auditor), internal auditing (CIA), information systems auditing (CISA and CISSP) and engineering (Eng.).

The BVG's philosophy is, on the one hand, to have an internal core of experienced professionals who, collectively, have expertise in the City's various spheres of professional activities related to the financial, the performance and compliance audit and the statutory and regulatory compliance audit. On the other hand, we enlist qualified external resources to meet our specific needs for highly specialized expertise to spread the workload inherent in the peak period related to audits of the financial statements of the City and the organizations for which the AG considers it appropriate to continue work and sometimes to provide temporary coverage for leaves or vacancies.

7.1.3.1. Workforce Trends and Status

The number of employees as of December 31, 2020, was 29, compared with 30 at the same point in 2019. During the year, four employees left the BVG to retire. Internally, one person was promoted to the position of DAG responsible for performance and compliance audits, thereby leaving a senior auditor position vacant as of December 31, 2020. In addition, four new resources joined the BVG: two resources joined the performance and compliance audit team, one person joined the IT audit team and an administrative assistant was also hired.

The following table illustrates the BVG's workforce status by branch and by authorized and filled position as of December 31, 2020.

TABLE 2**Workforce Status as of December 31, 2020**

Branch	Positions		
	Authorized	Filled	To be filled
Bureau of the Auditor General	4	4	0
Financial audit and administration	13	11	2
Financial performance audit	1	1	0
Performance and compliance audit	11	8	3
Information technology audit	6	5	1
Total	35	29	6

In 2018, we began to implement a strategic plan that led us to question the Bureau's organizational structure and to review our needs in terms of staffing and succession planning. This plan was completed in early 2019, and a follow-up is presented in section 7.2. of this chapter.

As a result, the BVG's organizational structure has been reviewed over the past two years. Three new positions were created, including a position of advisor in the performance and compliance audit branch and two deputy auditor positions in the financial audit and administration branch. In addition, as a result of employee retirements, certain positions were abolished or converted to more junior positions as part of the BVG's succession planning.

The following table illustrates changes in the BVG's workforce by branch and by position as of December 31, 2020.

TABLE 3

Staffing Changes in 2020

Department	Positions as of December 31, 2019	Positions created	Transfer	Position abolished	Positions as of December 31, 2020
Bureau of the Auditor General	4	0	0	0	4
Financial Audit and Administration	13	1	0	1	13
Pre-election Report	1	0	0	0	1
Performance and Compliance Audit	11	2	0	2	11
Information Technology Audit	7	0	0	1	6
Total	36	3	-	4	35

At the end of 2020, there were six vacant positions, which is the same number as the previous year.

Nonetheless, the efforts undertaken since 2018 to attract new qualified resources are beginning to pay off. Although the vacancy situation remained the same as in 2019 (6 vacant positions), at the time this report was drafted, four of the six positions had already been filled, namely:

- 1 audit advisor position in the performance and compliance audit branch;
- 1 audit advisor position in the IT audit branch;
- 2 senior auditor positions in the financial audit branch.

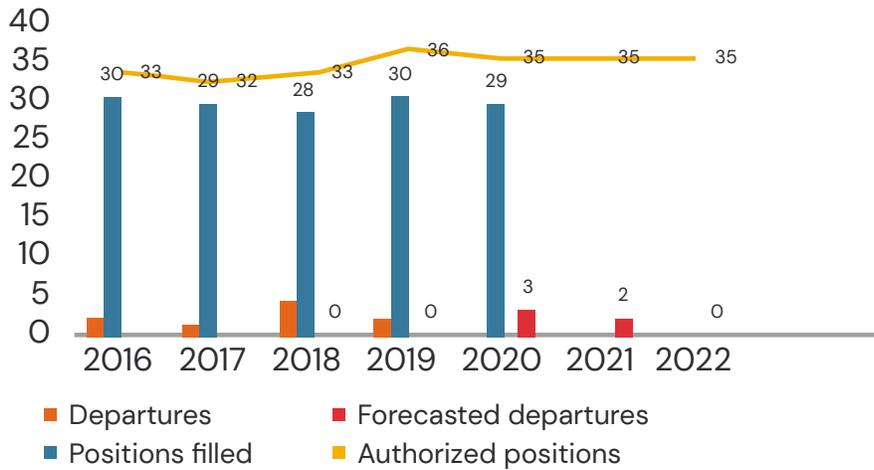
These hires have allowed us to put in place a succession plan to address the impending retirement of some of the BVG’s most experienced resources.

In addition, two employees will be retiring in 2021. The hiring process to fill these positions was already under way at the time this report was produced.

The following figure illustrating the evolution and forecast of the BVG’s workforce from 2016 to 2022 shows the importance of having put in place a succession plan over the past two years to prepare for training and ensure that expertise is maintained within the BVG. The renewal of resources ensures a certain stability for the next few years and we will continue our efforts to maintain that stability.

FIGURE 2

Evolution and Forecasting of the Workforce from 2016 to 2022



7.1.3.2. Use of time

The following figures show the distribution of total hours and hours worked by BVG employees for the last three years.

FIGURE 3

Breakdown of Total Hours

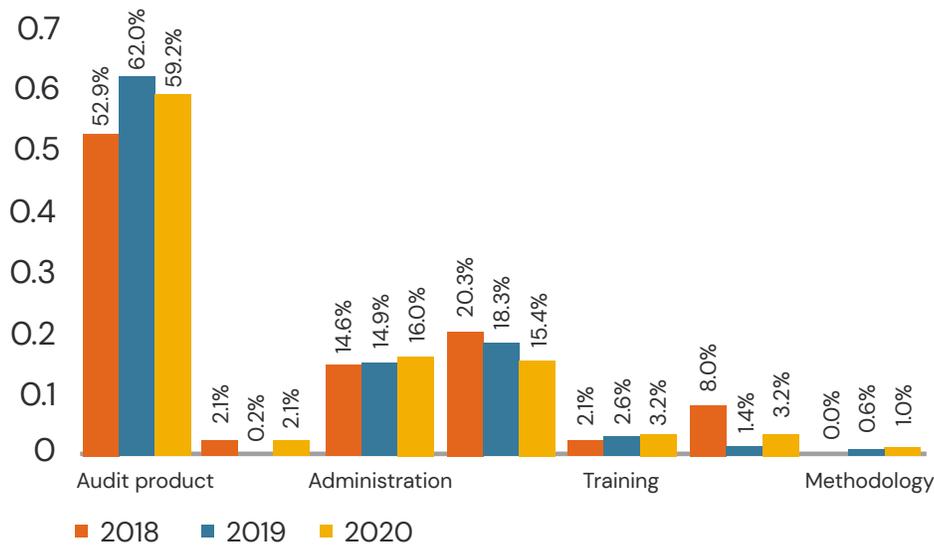
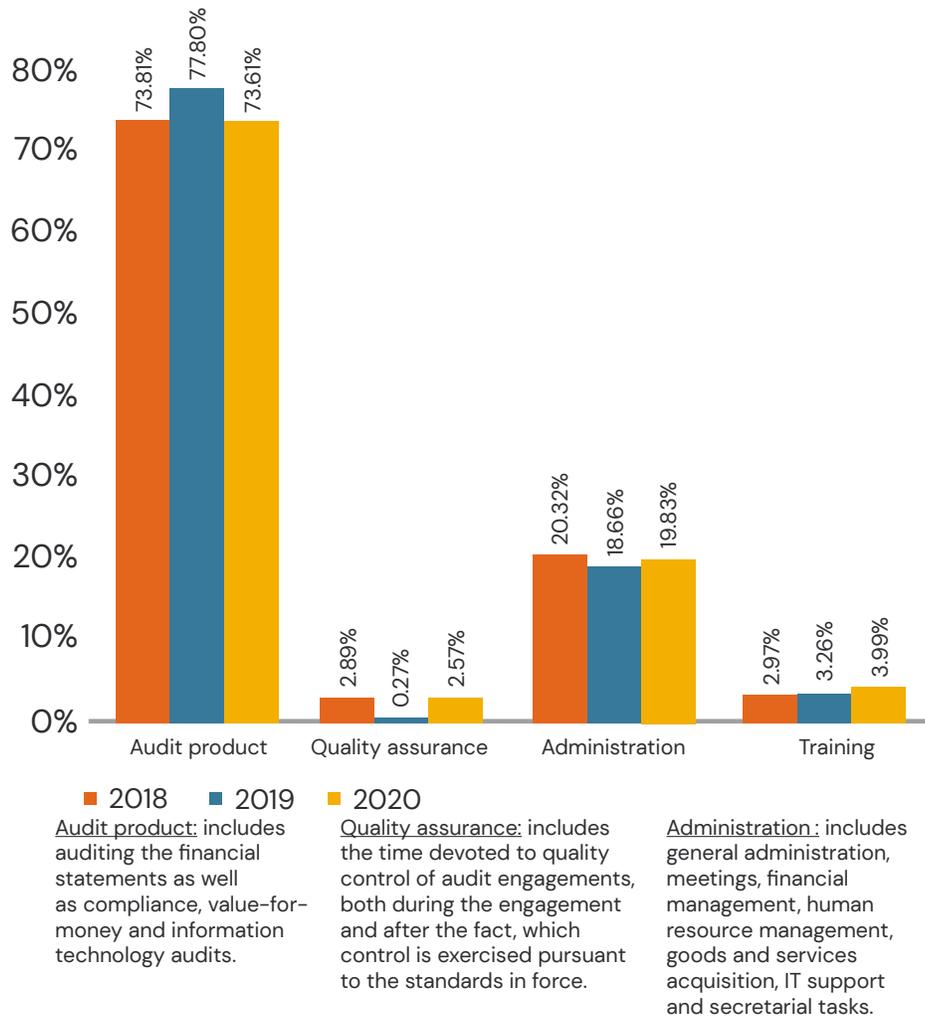


FIGURE 4

Breakdown of Hours Worked, by Activity



The results shown in the previous figure indicate a slight increase of 1.2% between 2019 and 2020 in the work hours spent on administrative activities.

The increase in the number of work hours spent on quality assurance is due to the return of one employee from maternity leave during 2020. In 2019, external consultants took on these hours.

Other indicators related to use of time and employee turnover are presented in the following tables.

7.1.3.3. Staff Turnover Rate

TABLE 4

Staff Turnover Rate

	2018	2019	2020
Turnover rate	14%	6.9%	13.6%

The calculation of the employee turnover rate includes retirements, resignations and transfers to other City departments and boroughs. As previously mentioned, there were four retirements in 2020.

A special thank you goes out to four employees who left the BVG for a well-deserved retirement after 30 to 40 years of service.

7.1.3.4. Absenteeism Rate

TABLE 5

Absenteeism Rate

	2018	2019	2020
Absenteeism rate	8.0%	1.4%	3.2%

The absenteeism rate increased by 1.8% between 2019 and 2020, due mainly to long-term and short-term sick leaves.

7.1.3.5. Number of Hours and Cost of Training

TABLE 6

Number of Hours and Cost of Training

	2018	2019	2020
Average hours of training per employee	39	47	58
Training cost to payroll ratio	2.8%	3.5%	4.0%

Resource training is a priority for the BVG and it is one of our objectives in our 2019–2023 strategic plan. As a result, the average number of hours spent on training increased from 47 to 58. The ratio of training costs to payroll, in accordance with the *Act to promote workforce skills development and recognition*, is up 0.5%. The increase is due in part to the hiring of new resources over the past two years. The target set for the City as a whole is 1%.

7.1.3.6. Equal Access to Employment

Like the City, the Bureau pays special attention to questions of equal access to employment. The breakdown of the representation of target groups in the Act *respecting equal access to employment in public bodies*, as of December 31 of the past three years, is presented in the following table.

TABLE 7

Representation of Target Groups

Target group	2018	2019	2020
Men	39.3%	40.0%	38.0%
Women	60.7%	60.0%	62.0%

Target group	2018	2019	2020
Aboriginal peoples	0.0%	0.0%	0.0%
Visible minorities	7.14%	3.33%	3.45%
Ethnic minorities	3.57%	3.33%	6.90%
Total	10.71%	6.66%	10.35%

We note that female representation on our staff improved considerably during this period. We now have 18 women on our staff of 29 employees.

7.1.4. Professional Service Contracts

Professional fees are the second-largest expense after the amounts spent on BVG salaries and benefits. We call on professionals to meet specific labour needs during the peak financial statement period or to temporarily fill resource gaps related to various leaves of absence or vacancies and to use highly specialized experts in areas related to our audit topics or for administrative purposes. Finally, since the BVG is administratively independent of the City, contracts were also awarded to support our infrastructure. As of December 31, 2020, a total of \$429,359 had been spent on professional fees (compared with \$506,584 in 2019) (see the breakdown in the following table).

The CTA (CQLR, c. C-19) authorizes the AG to conclude contracts for the purpose of acquiring goods or providing services. Consequently, because of her particular role, her mission, and the nature of her duties, the AG maintains independence in relation to contracting processes. However, the AG has a desire to be subject to the legislative and regulatory standards applicable to the City in the area of contract management, subject to exceptions, which must nevertheless be justified, if the need arises.

TABLE 8

Professional Fees

Directions	2020	2019	2018
Financial Audit	25.7%	27.5%	44.0%
Pre-election Report (financial performance audit)	22.8%	-	-
Performance and Compliance Audit	11.6%	19.3%	13.0%
Information Technology Audit	10.4%	22.4%	10.4%
Administrative	29.6%	30.8%	32.6%

7.1.5. Professional Inspection

The BVG is subject to a cyclical professional inspection by the Ordre des comptables professionnels agréés du Québec (OCPAQ) in accordance with the *Regulation respecting the professional inspection committee of the Ordre des comptables professionnels agréés du Québec* and the general surveillance program developed by the committee pursuant to section 12 of the Regulation and approved by the board of directors of the OCPAQ. The last professional inspection was conducted in September 2019.

The professional inspection focused on the documentation of our quality control system, on reports of our last cyclical inspections, and on issues related to the practice of the profession in the areas of financial, compliance and performance audits. The inspection committee concluded that the BVG fulfilled the requirements of the professional inspection program in all material aspects.

The BVG carries out cyclical professional inspections conducted by peers every three years as set out in its quality assurance manual.

7.1.6. Accountability – Allegations

Allegations can be submitted to the BVG by email, by mail, by telephone or in person. It should be noted that the BVG has an email box that was created specifically for this purpose; it is highly secure because it is hosted by a messaging service outside the City.

Allegations are processed according to priority criteria, such as the nature of the claim and the degree of risk involved. A well-documented and highly secure file is created for every allegation.

All other allegations that we receive undergo a preliminary evaluation to determine whether an investigation should be initiated, based on the nature of the claim, the probative value of the information provided and the risks involved. However, a preliminary evaluation is not conducted if the subject of the allegation does not fall within the AG’s purview or if the allegation is not substantial enough to warrant further investigation. Depending on the circumstances, such matters may be transferred to another City entity or closed without any further action being taken.

If an investigation is warranted, it will be conducted in accordance with recognized investigative and forensic accounting practices. Once the investigation is completed, a report may be produced and sent to the municipal administration. In cases where there is evidence of criminal wrongdoing, our findings are reported to the competent authorities.

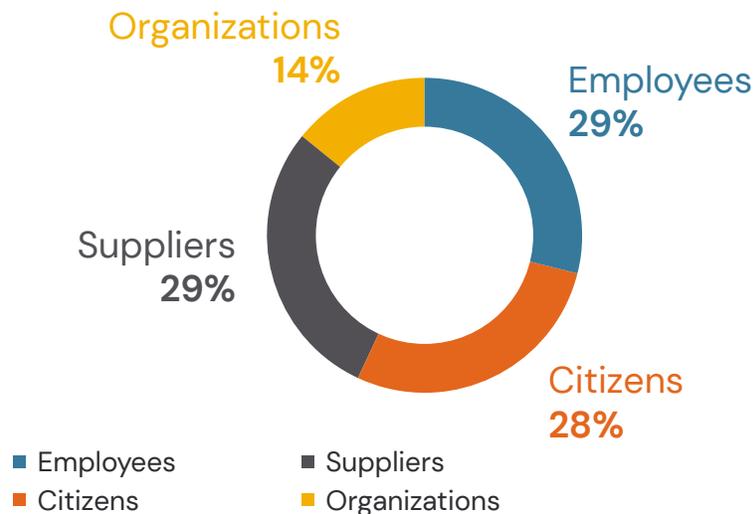
In 2020, we received 7 allegations, and 86% of the allegations were addressed in the course of the year. They were closed for the following reasons:

- Work in progress (1 allegation);
- Investigation completed (2 allegations);
- Transfer to another body, because the allegation was outside of the AG’s purview (4 allegations).

The following figure specifies the sources of the allegations received.

FIGURE 5

Overview of Allegations Received in 2020 By Source

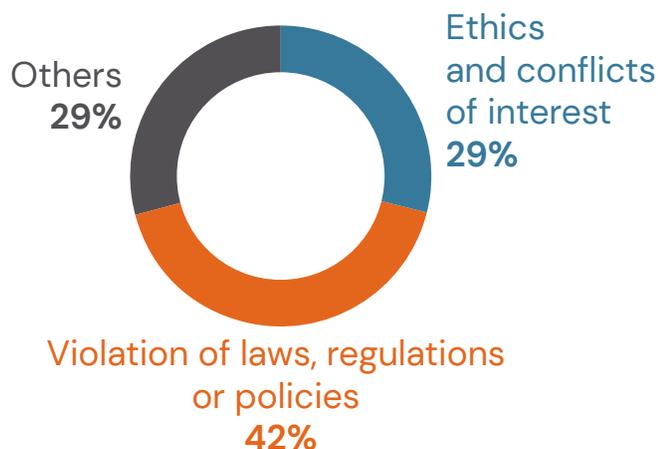


It is important to remember that we guarantee confidentiality to whistleblowers who agree to reveal their identity and that the *Public Protector Act* protects the confidentiality of whistleblowers. Furthermore, the provisions of section 107.16 of the CTA ensure that the Auditor General cannot be forced to make a statement about information she obtained in the performance of her duties or to produce a document containing such information. This Act is supplemented by the provisions of section 41 of the *Access to Information Act*.

The following figure groups the allegations received by category of alleged wrongdoing.

FIGURE 6

Overview of Allegations Received in 2020 By Category



7.1.7. Accountability – Requests for Access to information

In accordance with section 107.6.1 of the CTA (CQLR c. C-19), the Auditor General performs the duties conferred on the person in charge of access to documents or the protection of privacy with regard to the documents the chief auditor prepares in performing his duties or with regard to the documents he keeps for the purposes of carrying out his mandate, provided the latter documents are not also kept by a body subject to the Act.

During the course of 2020, we received one access to information request for which the information or documents could be held by a public body subject to the *Act respecting Access to documents held by public bodies and the Protection of personal information* (CQLR c. A-2.1) and not by the auditor general.

7.1.8. Technological Infrastructure

The Bureau has servers that are separate from the City's. For several years, the Bureau has had an infrastructure that enables all its employees to work remotely. In addition, we make sure every year that this network is secure. As a result, during the COVID-19 crisis, we quickly managed to implement the necessary measures to enable all of the Bureau's employees to work remotely in complete safety since March 2019 to date.

7.1.9. Promotion

Several members of the Bureau participate in various working groups, committees and boards of directors of organizations associated with our profession. This gives them an opportunity to be key actors in the advancement of our profession and be on the lookout for changes that will impact our work in the future. We are actively involved in providing comments on exposure drafts issued by the Public Sector Accounting Board (PSAB).

TABLE 9

Promotion Activities

	Body	Member
Annie Cédillotte, <i>Principal Auditor – Financial Audit and Administration</i>	Ordre des CPA du Québec	<ul style="list-style-type: none"> • Technical Working Group – Certification
Mélanie Normandin <i>Principal Auditor – Financial Audit and Administration</i>	Ordre des CPA du Québec	<ul style="list-style-type: none"> • Technical Working Group – Pension Plan
France Lessard, <i>Assistant Auditor General – Financial Audit and Administration</i>	Ordre des CPA du Québec	<ul style="list-style-type: none"> • Sectoral Working Group – Municipal Administration
Kim Tardif, <i>Officer in charge of Quality Assurance and Professional Practices</i>	Ordre des CPA du Québec	<ul style="list-style-type: none"> • Technical Working Group – Certification Reports • Technical Working Group – Accounting in the Public Sector
	Canadian Audit and Accountability Foundation	<ul style="list-style-type: none"> • Board of Directors • Governance Committee • National Capacity Building Committee
Michèle Galipeau, <i>Auditor General</i>	Ordre des CPA du Canada	<ul style="list-style-type: none"> • Public Sector Accounting Board (PSAB)
	Association des vérificateurs généraux municipaux du Québec	<ul style="list-style-type: none"> • Board of Directors

We encourage our employees to pursue these activities, which promote not only the Bureau, but also the profession of municipal legislative auditor.





7.2.

**Follow-up –
2019–2023
Strategic Plan**

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



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7.2. Follow-up – 2019–2023 Strategic Plan

7.2.1. Introduction

The year 2020 represents the second year in the implementation of our strategic plan, which defines the objectives guiding our actions over the next five years.

The *2019–2023 Strategic Plan* is structured around the following three main orientations:

1. Increasing the added value of the interventions;
2. Implementing innovative practices to ensure the quality of the work;
3. Ensuring the continuity of the team’s qualifications.

For each orientation, we set objectives along with indicators and targets to be met.

7.2.2. Accountability

We continued our audit and administrative work to enable us to attain the objectives and meet the targets we had set for 2020. A follow-up of the solutions retained by the management committee with the members of the working committees comprised of employees of the Bureau du vérificateur général (BVG) was conducted by the deputy auditors general.

7.2.2.1. Orientation 1 – Increasing the added value of the interventions

In order to increase the added value of our interventions, we had set 12 objectives to be attained over the course of the 2019–2023 period. Table 2 shows the results by objective set for the first orientation.

Objective	Indicator	Target	2020 results	Target		
				Met	Not met	N/A
1.1 Improve the performance audit selection process.	1. Implementation of a new risk matrix.	2019	N/A	✓		
	2. Update of the risk matrix.	Annually from 2020	Update completed in December 2020	✓		
	3. Improvement of the monitoring practice.	2019	N/A	✓		
1.2 Conduct value-added performance audits.	1. Number of performance audit mandates focused on issues or services that directly affect citizens and the quality of services they receive.	At least one mandate per year	2 reports	✓		
	2. Number of performance audit mandates with a sustainable development dimension.	At least one mandate per year	3 reports	✓		
	3. Number of performance audit mandates focusing on information technology.	At least two mandates per year	3 reports	✓		
	4. Number of performance audit mandates focused on cybersecurity.	At least one mandate per year	2 reports	✓		

Objective	Indicator	Target	2020 results	Target		
				Met	Not met	N/A
	5. Number of performance audit mandates addressing major legal and regulatory compliance issues.	At least one mandate per year	1 report	✓		
1.3 Conduct audits of the bodies referred to in section 107.7(3).	1. Development of an intervention strategy.	2019	N/A	✓		
	2. Implementation of the strategy.	2020	1 report	✓		
1.4 Conduct audits of the bodies that received subsidies from the City of Montréal.	1. Development of an intervention strategy.	2019	N/A	✓		
	2. Implementation of the strategy.	2020	1 report	✓		
1.5 Maintain our presence in financial auditing.	1. Review of our financial audit intervention strategy.	Once a year	Completed	✓		
1.6 Foster an increase in the rate of implementation of our recommendations.	1. Production of management charts to help reflect on the current approach to following up on the recommendations.	2019	N/A	✓		
	2. Assessment of the relevance of the current approach to following up on the recommendations.	2020	Under way		✓	
	3. Assessment of the degree of implementation of the new approach to following up on the recommendations.	2021 and subsequent years	N/A			✓

Objective	Indicator	Target	2020 results	Target		
				Met	Not met	N/A
1.7 Put processes in place to comply with the <i>Access to Information Act</i> .	1. Addition of information to the website and application form.	2019	N/A	✓		
	2. Drafting of the guidelines and procedures.	2019	N/A	✓		
	3. Implementation of follow-up mechanisms to meet the deadline required by law.	2019	N/A	✓		
1.8 Make it easier for elected officials and other stakeholders to understand our role.	1. Drafting of documents explaining the delineation between the mission of the Bureau du vérificateur général and the interventions of the Bureau de l'inspecteur général, the Bureau du contrôleur général, the Ombudsman and the City's organizational performance group.	2019	N/A	✓		
	2. Redesign of the website of the Bureau du vérificateur général.	2019	N/A		✓	

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.1 – Improve the performance audit selection process

INDICATOR 1 – Implementation of a new risk matrix

	2019	2020	2021	2022	2023
Targets	Deployment of the risk matrix in 2019	No target	No target	No target	No target
Results	Deployed in March 2019 Target met	N/A			

We have a new risk matrix to guide us in planning value-added audit mandates.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.1 – Improve the performance audit selection process

INDICATOR 2 – Update of the risk matrix

	2019	2020	2021	2022	2023
Targets	No target	Annual	Annual	Annual	Annual
Results	N/A	Update completed in December 2020 Target met			

The risk matrix was updated in December 2020 to reflect any changes in the administrative, normative and legislative environment of the City of Montréal (the City) and the bodies we can audit.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.1 – Improve the performance audit selection process

INDICATOR 3 – Improvement of the monitoring practice

	2019	2020	2021	2022	2023
Targets	Deployment of a monitoring exercise	No target	No target	No target	No target
Results	Completed in 2019 Target met	N/A			

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.2 – Conduct value-added performance audits

INDICATOR 1 – Number of performance audit mandates focused on issues or services that directly affect citizens and the quality of services they receive

	2019	2020	2021	2022	2023
Targets	1 report	1 report	1 report	1 report	1 report
Results	1 report	2 reports Target met			

In 2020, we conducted two mandates to this effect: a first on the *Street Lighting System Upgrade* and a second on the *Management of Lead Service Line Replacements*.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.2 – Conduct value-added performance audits

INDICATOR 2 – Number of performance audit mandates with a sustainable development dimension

	2019	2020	2021	2022	2023
Targets	1 report	1 report	1 report	1 report	1 report
Results	2 reports	3 reports Target met			

In 2020, we conducted three mandates to this effect: one on the *Street Lighting System Upgrade*, a second on the *Management of Lead Service Line Replacements* and a third on *Organic Waste Treatment Plants*.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.2 – Conduct value-added performance audits

INDICATOR 3 – Number of performance audit mandates focusing on information technology

	2019	2020	2021	2022	2023
Targets	2 reports	2 reports	2 reports	2 reports	2 reports
Results	3 reports	3 reports Target met			

Three audit mandates were carried out involving information technology, namely *Information Technology Risk Management*, *Management of the Système Budgétaire Automatisé Application* and *Geomatics Systems Management*.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.2 – Conduct value-added performance audits

INDICATOR 4 – Number of performance audit mandates focused on cybersecurity

	2019	2020	2021	2022	2023
Targets	1 report	1 report	1 report	1 report	1 report
Results	1 report	2 reports Target met			

In 2020, we performed two *Logical Penetration Tests* mandates.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.2 – Conduct value-added performance audits

INDICATOR 5 – Number of performance audit mandates addressing major legal and regulatory compliance issues

	2019	2020	2021	2022	2023
Targets	1 report	1 report	1 report	1 report	1 report
Results	1 report	1 report Target met			

A mandate on *Rolling Stock Maintenance Management (Excluding Public Safety Vehicles)* was conducted in 2020.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.3 – Conduct audits of the bodies referred to in section 107.7(3) of the *Cities and Towns Act*

INDICATOR 1 – Development of an intervention strategy

	2019	2020	2021	2022	2023
Targets	Tabling of a report on the intervention strategy	No target	No target	No target	No target
Results	Report tabled in December 2019 Target met	N/A			

The working committee's report containing the findings and recommendations for these objectives was presented to the management committee in December 2019.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.3 – Conduct audits of the bodies referred to in section 107.7(3) of the *Cities and Towns Act*

INDICATOR 2 – Implementation of the intervention strategy

	2019	2020	2021	2022	2023
Targets	No target	Deployment of the intervention strategy as of 2020			
Results	N/A	1 report Target met			

We deployed the intervention strategy that was proposed by the working committee. In 2020, we conducted a study on [TRANSLATION] *the subsidies granted for the enhancement projects of the Musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière.*

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.4 – Conduct audits of the bodies that received subsidies from the City of Montréal

INDICATOR 1 – Development of an intervention strategy

	2019	2020	2021	2022	2023
Targets	Tabling of a report on the intervention strategy	No target	No target	No target	No target
Results	Report tabled in December 2019 Target met	N/A			

In 2019, we adopted an intervention strategy to address accountability to the bodies referred to in section 107.9 of the *Cities and Towns Act*, i.e., those that received subsidies of at least \$100,000 from the City. We thus broadened the scope of our work to select bodies for which we conducted a review of the auditor's file, based on certain criteria such as the amounts given and the nature of the projects for which subsidies were granted.

With respect to the audit, our mandate covered [TRANSLATION] *the subsidies granted for the enhancement projects of the Musée d'archéologie et d'histoire de Montréal, Pointe-à-Callière.*

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.4 – Conduct audits of the bodies that received subsidies from the City of Montréal

INDICATOR 2 – Implementation of the intervention strategy

	2019	2020	2021	2022	2023
Targets	Deployment of the intervention strategy as of 2019				
Results	Completed	Completed Target met			

The results of our work are presented in chapters 3 (audit) and 6 (reporting) of this annual report.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.5 – Maintain our presence in financial auditing

INDICATOR 1 – Review of our financial audit intervention strategy

	2019	2020	2021	2022	2023
Targets	Annual review of the intervention strategy	Annual review of the intervention strategy	Annual review of the intervention strategy	Annual review of the intervention strategy	Annual review of the intervention strategy
Results	Review completed in May 2019	Review completed in May 2020 Target met			

We maintained our presence with the same strategy we deemed appropriate following the passage of Bill 155 in 2018.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.6 – Foster an increase in the rate of implementation of our recommendations

INDICATOR 1 – Production of management charts to help reflect on the current approach to following up on the recommendations

	2019	2020	2021	2022	2023
Targets	Production of management charts	No target	No target	No target	No target
Results	Charts were produced in the fall of 2018. Target met	N/A			

We presented the audit committee with detailed charts on the follow-up of the recommendations in the fall of 2018. A position has since been created by the municipal administration at the Bureau du contrôleur général. The person who holds that position is responsible for coordinating the follow-up of the recommendations and producing management charts for this purpose.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.6 – Foster an increase in the rate of implementation of our recommendations

INDICATOR 2 – Assessment of the relevance of the current approach to following up on the recommendations

	2019	2020	2021	2022	2023
Targets	No target	Tabling of a report to the management committee	No target	No target	No target
Results		Under way Target not met			

The tabling of the report to the management committee on the working committee's findings and recommendations regarding the evaluation of the relevance of our current approach to the follow-up of the recommendations has been postponed to 2021.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.6 – Foster an increase in the rate of implementation of our recommendations

INDICATOR 3 – Assessment of the degree of implementation of the new approach to following up on the recommendations

	2019	2020	2021	2022	2023
Targets	No target	No target	Implementation of the new approach as of 2021	Implementation of the new approach as of 2021	Implementation of the new approach as of 2021
Results	N/A	N/A			

We will evaluate the recommended actions for implementation in 2021.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.7 – Put processes in place to comply with the Access to Information Act

INDICATOR 1 – Addition of information to the website and application form

	2019	2020	2021	2022	2023
Targets	Addition of the information and the form	No target	No target	No target	No target
Results	The website has a section for this purpose. Target met	N/A			

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.7 – Put processes in place to comply with the Access to Information Act

INDICATOR 2 – Drafting of the guidelines and procedures

	2019	2020	2021	2022	2023
Targets	Drafting of the guidelines and procedures	No target	No target	No target	No target
Results	Guidelines and procedures drafted Target met	N/A			

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.7 – Put processes in place to comply with the *Access to Information Act*

INDICATOR 3 – Implementation of follow-up mechanisms to meet the deadline required by law

	2019	2020	2021	2022	2023
Targets	Deployment of the follow-up procedures	No target	No target	No target	No target
Results	Follow-up procedures deployed as of January 2019 Target met	N/A			

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.8 – Make it easier for elected officials and other stakeholders to understand our role

INDICATOR 1 – Drafting of documents explaining the delineation between the mission of the Bureau du vérificateur général and the interventions of the Bureau de l'inspecteur général, the Bureau du contrôleur général, the Ombudsman and the City's organizational performance group.

	2019	2020	2021	2022	2023
Targets	Tabling of a working committee report to the management committee	No target	No target	No target	No target
Results	Working committee's report tabled to the management committee in the fall of 2019 Target met	N/A			

The working committee's report containing the findings and recommendations was presented to the management committee in 2019.

ORIENTATION 1 – INCREASING THE ADDED VALUE OF THE INTERVENTIONS

Objective 1.8 – Make it easier for elected officials and other stakeholders to understand our role

INDICATOR 2 – Redesign of the website of the Bureau du vérificateur général

	2019	2020	2021	2022	2023
Targets	Redesign of the website	No target	No target	No target	No target
Results	Website redesign under way	Website redesign completed in March 2021 Target not met			

Work on the redesign of the website and the development of a new brand image was finalized in March 2021.

7.2.2.2. Orientation 2 – Implementing innovative practices to ensure the quality of the work

Four objectives had been identified to enable the BVG to put in place innovative practices to ensure the quality of our work in the strategic plan. The results by objective for orientation 2 are presented below.

Objective	Indicator	Target	2020 results	Target		
				Met	Not met	N/A
2.1 Maintain the quality of our work.	1. Proportion of the work evaluated that meets the assurance standards.	100%	100%	✓		
	2. Canadian assurance standards watch.	Ongoing	Ongoing in 2020	✓		
	3. Update of the Quality Assurance Manual.	Once a year	Update completed in February 2020	✓		
2.2 Integrate compliance with laws, regulations and frameworks into performance audit engagements.	1. Percentage of performance audit engagements addressing legal and regulatory compliance.	100%	100%	✓		
2.3 Systematically integrate assessment of risks of irregularities and fraud into the performance audit engagements.	1. Proportion of audit engagements performed that include an assessment of the risks of irregularities and fraud.	100%	100%	✓		

Objective	Indicator	Target	2020 results	Target		
				Met	Not met	N/A
2.4 Provide innovative technology and software tools to maintain our performance audit practices and foster a paperless work environment.	1. Review of the processes of the Bureau du vérificateur général for which technology and software tools have been updated or implemented.	Once a year	Completed for 2020	✓		
	2. Review of the paperless environment strategy.	2019	N/A	✓		
	3. Implementation of the indicators.	2020 and subsequent years	Under way		✓	

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.1 – Maintain the quality of our work

INDICATOR 1 – Proportion of the work evaluated that meets the assurance standards

	2019	2020	2021	2022	2023
Targets	100%	100%	100%	100%	100%
Results	100%	100%	Target met		

We have maintained the quality of our work by ensuring throughout 2020 that we met the applicable assurance standards and by keeping a constant watch on these standards.

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.1 – Maintain the quality of our work

INDICATOR 2 – Canadian assurance standards watch

	2019	2020	2021	2022	2023
Targets	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Results	Completed	Completed Target met			

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.1 – Maintain the quality of our work

INDICATOR 3 – Update of the Quality Assurance Manual

	2019	2020	2021	2022	2023
Targets	Annually	Annually	Annually	Annually	Annually
Results	Completed in January 2019	Completed in February 2020 Target met			

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.2 – Integrate compliance with laws, regulations and frameworks into performance audit engagements

INDICATOR 1 – Percentage of performance audit engagements addressing legal and regulatory compliance

	2019	2020	2021	2022	2023
Targets	100%	100%	100%	100%	100%
Results	100%	100% Target met			

For each mandate completed in 2020, we always made sure to include these elements.

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.3 – Systematically integrate assessment of risks of irregularities and fraud into the performance audit engagements

INDICATOR 1 – Proportion of the audit engagements performed that include an assessment of the risks of irregularities and fraud

	2019	2020	2021	2022	2023
Targets	100%	100%	100%	100%	100%
Results	100%	100%	Target met		

For each mandate completed in 2020, we always made sure to include these elements.

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.4 – Provide innovative technology and software tools to maintain our audit performance practices and foster a paperless work environment

INDICATOR 1 – Review of the processes of the Bureau du vérificateur général for which technology and software tools have been updated or implemented

	2019	2020	2021	2022	2023
Targets	Annually	Annually	Annually	Annually	Annually
Results	Completed	Completed	Target met		

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.4 – Provide innovative technology and software tools to maintain our audit performance practices and foster a paperless work environment

INDICATOR 2 – Review of the paperless environment strategy

	2019	2020	2021	2022	2023
Targets	Annually	No target	No target	No target	No target
Results	100% of audit files are electronic	N/A	Target met		

ORIENTATION 2 – IMPLEMENTING INNOVATIVE PRACTICES TO ENSURE THE QUALITY OF THE WORK

Objective 2.4 – Provide innovative technology and software tools to maintain our audit performance practices and foster a paperless work environment

INDICATOR 3 – Implementation of the indicators

	2019	2020	2021	2022	2023
Targets	No target	Tabling of a report to the management committee	No target	No target	No target
Results	N/A	Under way Target not met			

The tabling of the report presenting the indicators has been postponed to 2021 because of the pandemic.

7.2.2.3. Orientation 3 – Ensuring the continuity of the team’s qualifications

To ensure the continuity of the team’s qualifications, we had identified three objectives. The detailed results by objective for orientation 3 are presented below.

Objective	Indicator	Target	2020 results	Target		
				Met	Not met	N/A
3.1 Attract and retain the best resources to fully carry out the mission of the Bureau du vérificateur général and ensure the continuity of its expertise.	1. Development of a talent attraction and retention strategy.	2019	N/A	✓		
	2. Implementation of indicators.	2020	Under way		✓	
3.2 Promote and support the development of the staff’s expertise based on the needs of the Bureau du vérificateur général.	1. Establishment of an expertise development path for each employee.	2020	Under way		✓	
	2. Provision of a minimum number of days of training per employee.	6 days per year	8.3 days per employee	✓		
3.3 Achieve and maintain a high level of staff engagement.	1. Development of a skills assessment, succession planning, coaching and mentoring program.	2019	Under way		✓	
	2. Implementation of the skills assessment, succession planning, coaching and mentoring program.	2020	Under way		✓	

ORIENTATION 3 – ENSURING THE CONTINUITY OF THE TEAM’S QUALIFICATIONS

Objective 3.1 – Attract and retain the best resources to fully carry out the mission of the Bureau du vérificateur général and ensure the continuity of its expertise

INDICATOR 1 – Development of a talent attraction and retention strategy

	2019	2020	2021	2022	2023
Targets	Tabling of a report to the management committee	No target	No target	No target	No target
Results	Report tabled in December 2019 Target met	N/A			

The working committee’s report containing the findings and recommendations was presented to the management committee in December 2019. We continue to implement the various recommendations to update our talent attraction and retention strategy.

ORIENTATION 3 – ENSURING THE CONTINUITY OF THE TEAM’S QUALIFICATIONS

Objective 3.1 – Attract and retain the best resources to fully carry out the mission of the Bureau du vérificateur général and ensure the continuity of its expertise

INDICATOR 2 – Implementation of indicators

	2019	2020	2021	2022	2023
Targets	No target	Tabling of a report to the management committee	No target	No target	No target
Results	N/A	Under way Target not met			

The pandemic has somewhat slowed down the pace of the work and the establishment of indicators. This component has been postponed to 2021.

ORIENTATION 3 – ENSURING THE CONTINUITY OF THE TEAM’S QUALIFICATIONS

Objective 3.2 – Promote and support the development of the staff’s expertise based on the needs of the Bureau du vérificateur général

INDICATOR 1 – Establishment of an expertise development path for each employee

	2019	2020	2021	2022	2023
Targets	No target	Tabling of a report to the management committee	No target	No target	No target
Results	N/A	Under way Target not met			

We are continuing to establish expertise paths for some employees in 2020 and will ensure that this is extended to every employee. Following the working committee’s meetings, a template is being prepared and should be in place in 2021.

ORIENTATION 3 – ENSURING THE CONTINUITY OF THE TEAM’S QUALIFICATIONS

Objective 3.2 – Promote and support the development of the staff’s expertise based on the needs of the Bureau du vérificateur général

INDICATOR 2 – Provision of a minimum number of days of training per employee

	2019	2020	2021	2022	2023
Targets	6 days	6 days	6 days	6 days	6 days
Results	6.7 days	8.3 days Target met			

We continue to promote training for members of the BVG.

ORIENTATION 3 – ENSURING THE CONTINUITY OF THE TEAM’S QUALIFICATIONS

Objective 3.3 – Achieve and maintain a high level of staff engagement

INDICATOR 1 – Development of a skills assessment, succession planning, coaching and mentoring program

	2019	2020	2021	2022	2023
Targets	Tabling of the program to the management committee	No target	No target	No target	No target
Results	Under way	Under way Target not met			

The templates for the skills assessment program were completed in 2020. During 2021, the working group will finalize the succession planning, coaching and mentoring program templates.

ORIENTATION 3 – ENSURING THE CONTINUITY OF THE TEAM’S QUALIFICATIONS

Objective 3.3 – Achieve and maintain a high level of staff engagement

INDICATOR 2 – Implementation of the skills assessment, succession planning, coaching and mentoring program

	2019	2020	2021	2022	2023
Targets	No target	Deployment of the program	No target	No target	No target
Results	N/A	Under way Target not met			

The pandemic has somewhat slowed down the pace of the work and the implementation of the program. This component has been postponed to 2021.





7.3.

Assessment – Pre-Election Report

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



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7.3. Assessment – Pre-Election Report

7.3.1. Introduction

Last year, in chapter 6 of the 2019 Annual Report, we gave a detailed explanation of the historical background of this dossier, which began in January 2018 when the Bureau du vérificateur général received a verbal request to evaluate the possibility of carrying out a mandate to audit a Pre-Election Report (PER) produced by the municipal administration, as well as the impacts of such a mandate. In that Annual Report, we noted that we had promptly begun the analytical process and, on January 19, 2018, had sent a confidential memo explaining the potential impacts of this request, in particular that the work was to extend over the next three and a half years, that this would not be an opinion on budget forecasts, because the actual results could differ from the anticipated results and because, in accordance with section 107.12 of the *Cities and Towns Act*, this request had to go through city council. City council's request was finally sent to us on August 19, 2019, more than 18 months after our confidential memo concerning this potential request made by the municipal administration.

We do not wish to reiterate the entire historical background of this file, but Table 1 summarizes the key dates of this file.

TABLE 1

Historical Overview of the Dossier

<p>In January 2018</p>	<p>The Ville de Montréal announces its intention to introduce a Pre-Election Report and obtain a certification report based on the Québec government model that was published.</p> <p>The auditor general sends a confidential memo to the municipal administration explaining:</p> <ul style="list-style-type: none"> • the scope of the work that will have to extend over a period of 3.5 years; • that the request must originate with city council and must not interfere with the auditor general’s main obligations..
<p>July 11, 2019</p>	<p>A timeline is presented to the municipal administration and the President of the executive committee, including important deadlines in the performance of this mandate, such as September 30, 2019, for the receipt of the Pre-Election Report model, since this was the date indicated in our 2018 Annual Report and at various presentations to authorities.</p>
<p>August 20, 2019</p>	<p>Resolution CM19 0930 is adopted (regular meeting held on August 19, 2019) asking the auditor general to audit a Pre-Election Report (PER) prepared by the Service des finances (SF).</p>
<p>February 24, 2020</p>	<p>Follow-up report filed with city council to inform it that the Bureau du vérificateur général is unable to determine whether it can respond to city council’s request, since it had still not received the report prototype expected on September 30, 2019.</p>
<p>March 23, 2020</p>	<p>Another follow-up report is filed with city council stating that, since February 24, 2020, a detailed timeline has been sent to us, including the commitment to produce a model (prototype) of the Pre-Election Report for June 30, 2020.</p>
<p>June 23, 2020</p>	<p>Receipt of the prototype of the Pre-Election Report.</p>

7.3.2. Analysis

Work undertaken

As early as January 2018, we began work on this dossier, which involved perusing reports, defining the scope of such work in consultation with other auditors general who have conducted similar mandates and reviewing the best practices in this field as well as the assurance standards applicable to this type of mandate. It is worth repeating that this mandate was a first in the municipal sector in Canada.

Prior to city council's official request, we convened a series of meetings with the Administration to follow up on this dossier and confirm the intention of the Ville de Montréal (the City) to introduce such a report. Ongoing follow-up work was also done with the Audit Committee on this issue. It was not until July 2019, when the timeline that we had developed was presented, that we learned that this PER would be limited to income and expenditures

We subsequently continued our work on major processes and our analysis of the implications of this mandate. A chief auditor was made available for this work and six professionals from the financial audit team were also assigned to this dossier for several months. To support us we engaged a wide array of specialists, including economists, actuaries, lawyers and professional chartered accountants with relevant experience for this type of mandate.

Meetings with the municipal administration continued—on a weekly basis once we had filed our follow-up report with city council on February 24, 2020; in this report, we expressed our concerns about the progress of this file (see Table 1 – Historical Overview of the Dossier).

Assurance Standards

We knew from the outset that we could not use assurance standards for financial audits, since the data found in the PER is not historical financial data, but forward-looking data.

Consequently, the audit of the PER was to be an assurance engagement different from audits of financial statements or other historical financial information. According to the Auditing and Assurance Standards Board of CPA Canada, such an engagement could potentially be carried out according to the requirements of standard CSAE 3001, Direct Engagements.

The first step in a direct engagement is to implement the necessary procedures for accepting the engagement while ensuring that the conclusions resulting from it are appropriate. One of the requirements of the Standard is that an engagement be accepted only when certain conditions are present, such as:

- Conclusions can be drawn based on suitable criteria determined by the auditor general;
- It is appropriate to expect to be able to obtain the relevant evidence necessary to support the conclusion.

I. Conclusions can be Drawn Based on Suitable Criteria

Based on good practices, our definition of mandates of the same type performed by other provincial legislative auditors and the definition of the PER set forth by the City in its 2020 budget, we were able to specify three objectives for which we identified suitable criteria for this type of file. In an assurance engagement, a conclusion must be expressed with respect to the criteria established for areas that are of interest to users.

TABLE 2

Objectives

1.	It informs electors about the state of the City's public finances and helps them appreciate their content.
2.	It forms a common basis for all political parties to develop their electoral platforms.
3.	The assumptions and forecasts found in the Pre-Election Report are reasonable.

Our analysis of the suitable criteria supporting these three objectives for the PER prototype submitted by the Service des finances on June 23, 2020, led us to conclude that they have not been met. We noted that the information presented is incomplete and not comparable with other public financial reports, that no economic update was carried out to allow the current situation to be reflected in the budget, that no actual data was either presented or used to develop assumptions, and that the forecasts were calculated on the basis of the budget adopted the previous year and did not take the most recent financial results into account.

II. Relevant Evidence Necessary to Support the Conclusion

Although the PER focuses on forward-looking rather than historical data, it is imperative that we be able to obtain sufficient relevant evidence to be able to express an opinion about the PER. Almost all the supporting documents that were provided to us are excerpts from the previous year's budget, emails, spreadsheet files or other internal documents that do not meet the definition of relevant evidence.

Furthermore, we noted that the assumptions were not based on analysis of the actual historical data of the past few fiscal periods and cannot be used to identify trends in support of the amounts established for the forecasts. We did not track down any explanatory analyses of the discrepancies between previous forecasts and actual results or the records or minutes of budget committees supporting the strategic decisions reflected in the PER.

Conclusion

While we have both the expertise and the ability to carry out this type of mandate, it is clear that the report prototype that we received at the end of June 2020 and the files that support it do not allow us to express an opinion. Indeed, the conditions that would allow us to draw conclusions based on suitable criteria supporting the objectives of a Pre-Election Report and to obtain sufficient relevant evidence necessary to support our conclusions were not present.

We made a presentation to the Audit Committee on this subject on October 16, 2020 (see Appendix A). As a follow-up to our presentation, the Audit Committee filed a document with city council in November 2020 recommending that the request to produce a Pre-Election Report (PER) be withdrawn by the Service des finances (SF) and that it be audited by the auditor general. City council nevertheless persisted in its request that the SF produce a 2022–2024 budgetary framework no later than August 31, 2021, but it will not be audited (see Appendix B).

The auditor general gave this same presentation to city council in plenary session on January 26, 2021, and answered questions (see Appendix A).

We nonetheless considered it appropriate to continue our audit of the main budgetary processes affecting income and expenditures. In 2021, we produced a report containing our conclusions, which are found in chapter 4 of this report.

Over the next few years, we will conduct a performance audit on the processes involved in the preparation of the Ten-Year Capital Works Program.

Moreover, we returned the entire supplementary budget of \$900,000 that city council had allocated to us at its meeting of March 23, 2020, and we paid the total expenses that we incurred for this dossier, nearly \$500,000, out of our own budget.

The introduction of a PER is a colossal undertaking that is not to be underestimated. In order to be able to present a PER with high-quality financial information that complies with the prescribed requirements, the processes that support the production of PER need to be adequate, effective and rigorous, and the internal experts assigned to this task must be appropriate as well.

Appendices

Appendix A

Presentation

Auditor General's Observations

Pre-Election Report

October 16, 2020, to the Audit Committee

January 26, 2021, to City Council

Observations de la vérificatrice générale

Rapport préélectoral

Le 16 octobre 2020 au comité d'audit
Le 26 janvier 2021 au conseil municipal

Ordre du jour

1. Historique du dossier
2. Analyse de la capacité d'accepter la mission
3. Objectifs
4. Résultats
 - I. Capacité de conclure sur les critères valables
 - II. Éléments probants nécessaires pour étayer la conclusion
5. Conclusion

1. Historique du dossier

	Intention de la Ville de Montréal (la Ville) de se doter d'un rapport préélectoral (RPE) et d'obtenir un rapport de certification selon le modèle du gouvernement du Québec rendu public.
Janvier 2018	Transmission par la vérificatrice générale d'une note confidentielle à l'administration municipale signifiant : <ul style="list-style-type: none"> • l'ampleur des travaux qui devront s'échelonner sur trois ans; • l'obligation que la demande provienne du conseil municipal (conseil), et ce, sans contrevenir à ses obligations principales.
20 août 2019	Adoption de la résolution CM19 0930 (assemblée ordinaire du 19 août 2019) demandant à la vérificatrice générale d'auditer un RPE préparé par le Service des finances (SF).

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1. Historique du dossier (suite)

24 février 2020	Dépôt au conseil d'un rapport de suivi afin de l'informer que le Bureau du vérificateur général (BVG) n'est pas en mesure de déterminer s'il pourra répondre à la demande du conseil, n'ayant toujours pas reçu le prototype du rapport attendu le 30 septembre 2019.
23 mars 2020	Dépôt au conseil d'un autre rapport de suivi faisant état que depuis le 24 février 2020, un échéancier détaillé nous avait été remis incluant l'engagement de produire un modèle (prototype) du RPE pour le 30 juin 2020.
23 juin 2020	Réception du prototype du RPE.

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2. Analyse de la capacité d'accepter la mission

Types de missions possibles :

- **Audit financier** : portant sur des informations financières historiques;
- **Autre mission d'audit** : une mission de certification autres que les audits d'états financiers ou d'autres informations financières historiques, soit :
 - La norme NCMC 3000, *Missions d'attestation autres que les audits ou examens d'informations financières historiques*
 - Les critères sont déterminés, évalués et mesurés par la direction;
 - La vérificatrice générale conclura sur les affirmations de la direction.
 - La norme NCMC 3001, *Missions d'appréciation directe*
 - Les critères sont déterminés, évalués et mesurés par la vérificatrice générale;
 - La direction ne procède pas à la mesure ou à l'évaluation des critères.

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2. Analyse de la capacité d'accepter la mission (suite)

Les exigences de la norme stipulent qu'on ne doit accepter une mission que lorsque certaines conditions sont réunies incluant les points suivants :

- La capacité de conclure sur les critères valables déterminés par la vérificatrice générale;
- Obtenir les éléments probants nécessaires pour étayer la conclusion.

Dans une mission de certification, une conclusion doit être exprimée en regard de critères établis relativement à des éléments qui présentent un intérêt pour les utilisateurs.

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2. Analyse de la capacité d'accepter la mission (suite)

- En nous appuyant sur :
 - les bonnes pratiques (par exemple : l'OCDE);
 - le balisage des mandats de même nature effectués par d'autres vérificateurs législatifs provinciaux;
 - la définition du RPE que la Ville a exposé dans son budget 2020.

Nous avons pu dégager **trois objectifs** pour lesquels nous avons identifié des **critères valables** qui présentent un intérêt pour les utilisateurs.

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3. Objectifs

Objectif 1 : Il renseigne les électeurs sur l'état des finances publiques de la Ville et il permet d'en apprécier le contenu.

Objectif 2 : Il représente une base commune permettant à toutes les formations politiques de développer leur plateforme électorale.

Objectif 3 : Les hypothèses et prévisions du RPE sont raisonnables (audit versus examen)

Pour chaque objectif, nous avons identifié des critères valables.

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4. Résultats

I. Capacité de conclure sur les critères valables

Globalement, les **critères valables** supportant ces trois objectifs **ne sont pas rencontrés**.

Nous avons observé entre autres les points suivants :

- L'information présentée est incomplète, par exemple :
 - la présentation des revenus et des dépenses n'est pas suffisamment détaillée ne permettant pas de voir les changements significatifs sur les niveaux de service à la population;
 - l'état de la dette à long terme n'est pas présenté.
- De l'information non comparable aux autres rapports financiers publics;
- Aucune mise à jour économique entre le dernier budget et la situation actuelle;
- Aucune donnée réelle n'est présentée ni utilisée dans l'élaboration des hypothèses;
- Les prévisions sont calculées à partir du budget adopté l'année précédente et ne tiennent pas compte des résultats financiers les plus récents.

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3. Résultats (suite)

II. Éléments probants nécessaires pour étayer la conclusion.

Les pièces justificatives obtenues sont :

- des extraits du budget de l'année précédente;
- des courriels;
- des fichiers de calcul;
- autres documents internes.

Ces éléments **ne répondent pas** à la définition d'éléments probants suffisants.

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4. Résultats (suite)

II. Éléments probants nécessaires pour étayer la conclusion.

De plus, nous avons observé que :

- les hypothèses ne sont pas basées sur l'analyse des données historiques réelles des derniers exercices ce qui ne permet pas d'établir des tendances qui viennent supporter les montants établis pour les prévisions;
- il n'y a pas d'analyses explicatives des écarts entre les prévisions antérieures et les résultats réels des périodes en cause;
- il n'y a pas de compte-rendu ou procès-verbaux des rencontres du comité du budget qui sous-tendent les décisions stratégiques reflétées dans le RPE.

5. Conclusion

Vu :

- Impossibilité de conclure sur des critères valables;
- Impossibilité d'obtenir les éléments probants nécessaires pour étayer nos conclusions.

Conclusion :

- Conditions non rencontrées pour accepter la mission demandée par le conseil;
- Nous remettons l'intégralité du budget supplémentaire de 900 000 \$ qui nous a été accordé.

Tous les travaux effectués, jusqu'à présent, à l'égard du présent dossier seront ainsi assumés à même notre budget annuel de la vérificatrice générale.

5. Conclusion (suite)

La mise en place initiale d'un RPE est un travail colossal à ne pas sous-estimer.

Pour présenter un RPE avec de l'information financière de qualité il faut que :

- les processus qui supportent la production du RPE soient adéquats, efficaces et rigoureux;
- l'expertise interne qui y est affectée soit appropriée.

5. Conclusion (suite)

Nous jugeons approprié de :

- poursuivre les travaux d'audit sur les principaux processus budgétaires touchant les revenus et les dépenses.;
- produire un rapport contenant nos conclusions en 2021;
- conduire ultérieurement un mandat d'audit de performance sur les processus entourant la confection du PTI.

Ceci permettra à l'administration municipale :

- d'améliorer les processus budgétaires;
- de développer l'expertise et les outils requis pour élaborer, si tel est toujours sa volonté, un RPE renseignant sur la situation financière de la Ville et répondant aux besoins des utilisateurs, ce qui constituerait une première dans le monde municipal.

Merci de votre attention

Annexe 1 : Comparabilité

PRÉSENTATION AUX ÉTATS FINANCIERS	PRÉSENTATION AU BUDGET	PRÉSENTATION DU PROTOTYPE DU RAPPORT PRÉÉLECTORAL
REVENUS	REVENUS	Les perspectives budgétaires
Taxes	Taxes	Revenus de taxations
Compensations tenant lieu de taxes	Compensations tenant lieu de taxes	
Quotes-parts	Quotes-parts	Quotes-parts
Transferts	Transferts	Subventions et transferts
Services rendus	Services rendus	Autres revenus
Imposition de droits	Imposition de droits	
Amendes et pénalités	Amendes et pénalités	
Intérêt	Intérêts	
Autres revenus	Autres revenus	
	Affectation de revenus	
Total – Revenus	Total – Revenus	Total – Volet revenu
	DÉPENSES	
Charges de fonctionnement	Dépenses par secteurs d'activités	L'évolution des dépenses
Administration générale	Services administratifs	Rémunération globale
Sécurité publique	Sécurité publique	Service de la dette et paiement au comptant
Transport	Services institutionnels	Contribution au transport en commun
Hygiène du milieu	Mobilité et attractivité	Autres contributions
Santé et bien-être	Qualité de vie	Autres dépenses de fonctionnement
Aménagement, urbanisme et développement	Services aux citoyens	
Loisirs et culture	Arrondissements	
Frais de financement		
Total – Charges de fonctionnement	Total – Dépenses par secteurs d'activités	Total – Volet dépenses
Quotes-parts pour le financement des activités de l'agglomération	Dépenses de financements corporatives	
	Service de la dette brute	
	Paielements au comptant des immobilisations	
Excédent avant financement et affectations	Total – Dépenses de financements corporatives	
Financement	Autres dépenses corporatives	
Remboursement de la dette à long terme	Dépenses communes	
	Dépenses de contributions	
Affectations	Total – Autres dépenses corporatives	
Activités d'immobilisations		
Excédent (déficit) des activités de fonctionnement non affecté	Élimination des transactions internes et interentités	
Excédent des activités de fonctionnement affecté		
Réserves financières et fonds réservés		
Charges constatées à taxer ou à pourvoir		
	Total - Dépenses	
Excédent (déficit) des activités de fonctionnement à des fins fiscales de l'exercice	Total équilibre budgétaire	Déséquilibre au cadre financier

Annexe 2 : Projet de rapport d'audit du professionnel en exercice indépendant sur le rapport préélectoral 2022

Annexe 2 – Projet de rapport d’audit du professionnel en exercice indépendant sur le rapport préélectoral 2022

Aux membres du conseil municipal de la Ville de Montréal,
Aux membres du conseil d’agglomération de Montréal

Opinion de la vérificatrice générale

J’ai reçu pour mission d’effectuer l’audit du rapport préélectoral sur l’état des finances de la Ville de Montréal (la « Ville ») pour l’année financière 2022 (collectivement le « rapport préélectoral »).

Je n’exprime aucune opinion sur le rapport préélectoral ci-joint de la Ville. En raison de l’importance des problèmes décrits dans la section « Fondement de l’impossibilité d’exprimer une opinion » de mon rapport, je n’ai pas été en mesure d’obtenir des éléments probants suffisants et appropriés pour fonder une opinion d’audit sur le rapport préélectoral.

Fondement de l’impossibilité d’exprimer une opinion

Le rapport préélectoral inclut entre autres des prévisions financières qui reposent sur un certain nombre d’hypothèses. La direction du Service des finances (SF) n’a pas été en mesure de me fournir des données et des analyses pertinentes et fiables à l’appui des hypothèses utilisées dans la préparation de ces prévisions financières. Je n’ai ainsi pas été en mesure de déterminer si ces hypothèses constituent une base raisonnable pour établir ces prévisions. De plus, la Ville ne fait aucun compte-rendu ou procès-verbal des rencontres du comité du budget qui sous-tendent les décisions politiques reflétées dans le rapport préélectoral. Je n’ai pas été en mesure de m’assurer par d’autres moyens que les hypothèses et les prévisions prennent en compte les informations financières les plus récentes de même que les dernières orientations et les décisions de la Ville.

Responsabilités de la direction à l’égard du rapport préélectoral

La direction du Service des finances de la Ville est responsable de la préparation et de la présentation fidèle du rapport préélectoral. Elle est également responsable du contrôle interne qu’elle considère comme nécessaire pour permettre la préparation d’un rapport préélectoral exempt d’anomalies significatives, que celles-ci résultent de fraudes ou d’erreurs.

Responsabilité de la vérificatrice générale à l'égard du rapport préélectoral

Ma responsabilité consiste à réaliser un audit du rapport préélectoral conformément à la Norme canadienne de missions de certification (NCMC) 3001, *Missions d'appréciation directe* et à délivrer un rapport. Toutefois, en raison des problèmes décrits dans la section « Fondement de l'impossibilité d'exprimer une opinion » de mon rapport, je n'ai pas été en mesure d'obtenir des éléments probants suffisants et appropriés pour fonder une opinion d'audit sur le rapport préélectoral de la Ville, au regard de l'objectif et des critères que j'ai jugés valables.

Le Bureau du vérificateur général (BVG) de la Ville s'est conformé aux règles ou au code de déontologie pertinents applicables à l'exercice de l'expertise comptable et se rapportant aux missions de certification, qui sont publiés par les différents organismes professionnels comptables, lesquels reposent sur les principes fondamentaux d'intégrité, d'objectivité, de compétence professionnelle et de diligence, de confidentialité et de conduite professionnelle.

Le BVG applique également la Norme canadienne de contrôle qualité 1, *Contrôle qualité des cabinets réalisant des missions d'audit ou d'examen d'états financiers et d'autres missions de certification*, et, en conséquence, maintient un système de contrôle qualité exhaustif qui comprend des politiques et des procédures documentées en ce qui concerne la conformité aux règles de déontologie, aux normes professionnelles et aux exigences légales et réglementaires applicables.

Michèle Galipeau, CPA auditrice, CA
Vérificatrice générale de la Ville de Montréal

Montréal, Québec
Date

Appendix B

Ville de Montréal Documents

Appendix B-1

GDD Filed by the Audit Committee



Dossier # : 1205330009

Unité administrative responsable :	Direction générale , Cabinet du directeur général , Division du soutien aux instances
Niveau décisionnel proposé :	Conseil municipal
Projet :	-
Objet :	Prendre connaissance de la recommandation du comité d'audit de la Ville au conseil concernant la production et l'audit d'un rapport préélectoral

Il est recommandé,

1 - de prendre connaissance de la recommandation du comité d'audit de la Ville concernant la production et l'audit d'un rapport préélectoral;

2 - de mandater le Service des finances pour produire un cadre budgétaire préliminaire 2022-2024 d'ici le 31 août 2021.

Signé par Serge LAMONTAGNE **Le** 2020-11-11 07:38

Signataire :

Serge LAMONTAGNE

Directeur général
Direction générale , Cabinet du directeur général

IDENTIFICATION

Dossier # :1205330009

Unité administrative responsable :	Direction générale , Cabinet du directeur général , Division du soutien aux instances
Niveau décisionnel proposé :	Conseil municipal
Projet :	-
Objet :	Prendre connaissance de la recommandation du comité d'audit de la Ville au conseil concernant la production et l'audit d'un rapport préélectoral

CONTENU

CONTEXTE

En janvier 2018, l'administration municipale s'est engagée à ce que la Vérificatrice générale puisse auditer un rapport préélectoral sur l'état des finances publiques de la Ville en s'inspirant de l'expérience en cours à l'Assemblée Nationale. L'objectif principal du rapport préélectoral et du rapport de la Vérificatrice était d'informer, de façon transparente et impartiale, la population montréalaise et les futurs élus de la situation financière de la Ville à la veille d'une élection municipale.

À son assemblée ordinaire du mois d'août 2019 (CM19 0930), le conseil municipal mandatait le Service des finances afin de produire un rapport préélectoral sur l'état des finances de la Ville de Montréal et à la Vérificatrice générale de la Ville de Montréal d'auditer ce rapport préélectoral.

Dans le cadre de la séance de travail du comité d'audit tenue le 16 octobre 2020, la vérificatrice générale, Mme Michèle Galipeau, a indiqué que le prototype développé par le Service des finances ne serait donc pas en mesure de répondre aux objectifs énoncés dans le budget 2020 quant au rapport préélectoral en termes d'information financière sur l'état des finances publiques et de base comparable. De plus, la pandémie a impacté la capacité de livrer un document en temps et qui réponde aux besoins d'utilité d'un tel document.

DÉCISION(S) ANTÉRIEURE(S)

CG20 0217 (23 avril 2020) - Adopter le projet de modification de la Charte du comité de vérification élargi de la Ville de Montréal.

CM19 0930 (19 août 2019) - Mandater le Service des finances afin de produire un rapport préélectoral sur l'état des finances de la Ville de Montréal au plus tard le 30 juin 2021 / Mandater la Vérificatrice générale de la Ville de Montréal d'auditer ce rapport préélectoral et de présenter cet audit au plus tard le 23 septembre 2021.

DESCRIPTION

En vertu des articles 29 et 36 de la Charte du comité, le comité d'audit peut faire au conseil les commentaires et les recommandations résultant de ses travaux.

JUSTIFICATION

ASPECT(S) FINANCIER(S)

DÉVELOPPEMENT DURABLE

IMPACT(S) MAJEUR(S)

IMPACT(S) LIÉ(S) À LA COVID-19

Cette réponse est soumise en tenant compte du contexte de la Covid-19.

OPÉRATION(S) DE COMMUNICATION

CALENDRIER ET ÉTAPE(S) SUBSÉQUENTE(S)

Comité exécutif - séance visée : 11 novembre 2020
Conseil municipal - séance visée : 16 novembre 2020

CONFORMITÉ AUX POLITIQUES, AUX RÈGLEMENTS ET AUX ENCADREMENTS ADMINISTRATIFS

« À la suite des vérifications effectuées, le signataire de la recommandation atteste de la conformité de ce dossier aux politiques, aux règlements et aux encadrements administratifs.

VALIDATION

Intervenant et sens de l'intervention

Autre intervenant et sens de l'intervention

Parties prenantes

Lecture :

RESPONSABLE DU DOSSIER

Fredy Enrique ALZATE POSADA
Conseiller en analyse

Tél : 514 8722895

ENDOSSÉ PAR Le : 2020-10-23

Domenico ZAMBITO
Chef de division soutien aux instances

Tél : 514 872-3125

Appendix B-2

City Council Resolution

Extrait authentique du procès-verbal d'une rencontre du comité d'audit

Rencontre statutaire du vendredi 16 octobre 2020

Résolution: CA 2020-001

Attendu la demande du conseil de produire un rapport préélectoral;

Attendu la teneur du travail colossal lié à un tel rapport;

Attendu les impacts de la pandémie sur la capacité de livrer un document en temps et qui réponde aux besoins d'utilité d'un tel document;

Attendu le manque de ressources humaines et de systèmes adéquats pour supporter l'exercice;

Attendu la présentation faite par la vérificatrice générale au comité d'audit séance tenante soulignant que le prototype développé par les Finances ne serait donc pas en mesure de répondre aux objectifs énoncés dans le budget 2020 quant au rapport préélectoral en termes d'information financière sur l'état des finances publiques et de base comparable.

Attendu la bonne foi de toutes les parties en regard du travail effectué;

Attendu que nous prenons acte de la poursuite par la vérificatrice générale des travaux d'audit sur les principaux processus budgétaires touchant les revenus et dépenses dont les conclusions seront publiées dans un rapport qui sera déposé en 2021;

Attendu que la VG assumera à même son budget tous les coûts encourus à ce jour pour ce dossier et qu'elle remet la totalité du budget de 900 000 \$ qui lui avait été alloué pour les travaux;

Il est proposé par Mme Laurence Lavigne-Lalonde

appuyé par M. Yves Gauthier

Et résolu :

de recommander au conseil de retirer sa demande d'un rapport pré-électoral et de prendre acte de la continuation par la vérificatrice générale de l'audit des principaux processus budgétaires touchant les revenus et dépenses pour fin de publication dans le rapport déposé en 2021;

Adopté à l'unanimité des membres du comité d'audit présents.

Lisa BAILLARGEON

Yves GAUTHIER

Président du comité d'audit

Vice-président



8.

Appendices

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal



8.1.

Excerpts from the *Cities and Towns Act*

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

8.1. Excerpts from the *Cities and Towns Act*

IV.1. — *Chief auditor*

2001, c. 25, s. 15.

a. — *Appointment*

2018, c. 8, s. 33.

107.1. The council of every municipality having 100,000 inhabitants or more shall have an officer called the chief auditor who is a member of the Ordre des comptables professionnels agréés du Québec.

2001, c. 25, s. 15; 2018, c. 8, s. 34.

107.2. The chief auditor shall, by a resolution approved by a two-thirds majority of the votes of the members of the council, be appointed for a single term of seven years.

2001, c. 25, s. 15; 2018, c. 8, s. 35.

107.2.1. The chief auditor shall perform his duties of office exclusively and on a full-time basis. However, he may participate in educational activities, in particular as an instructor, or professional activities within associations of auditors, educational or research institutions, committees within his professional order, or the Association des vérificateurs généraux municipaux du Québec.

2018, c. 8, s. 36.

- 107.3.** In no case may the following persons act as chief auditor:
- (1) a member of the council of the municipality and, where applicable, of a borough council;
 - (2) the associate of a member mentioned in subparagraph 1;
 - (3) a person who, personally or through an associate, has any direct or indirect interest in a contract with the municipality, a legal person referred to in subparagraph 2 of the first paragraph of section 107.7 or a body referred to in subparagraph 3 of that paragraph;
 - (4) a person who, in the four years preceding his appointment, was a member of a council, or an employee or officer, of the municipality, unless the person was an employee under the direction of the chief auditor during all or part of those years.

The chief auditor shall disclose in every report produced any situation that could cause a conflict between the chief auditor's personal interest and duties of office.

2001, c. 25, s. 15; 2018, c. 8, s. 37.

- 107.4.** If the chief auditor is unable to act, or if the office of chief auditor is vacant, the council shall:
- (1) not later than at the sitting following the inability to act or the vacancy, designate a person qualified to replace the chief auditor, for a period of not more than 180 days;
 - (2) not later than at the sitting following the inability or the vacancy, or not later than at the sitting following the expiry of the period fixed under paragraph 1, appoint a new chief auditor in accordance with section 107.2.

2001, c. 25, s. 15.

b. — Operating expenses
2018, c. 8, s. 38.

107.5. The budget of the municipality shall include an appropriation to provide for payment of a sum to the chief auditor to cover the expenses relating to the exercise of the chief auditor's duties.

Subject to the third paragraph, the appropriation must be equal to or greater than the sum of A + B + C where:

- (1) A is \$500,000;
- (2) B is the product obtained by multiplying 0.13% by the portion of the appropriations provided for in the budget for operating expenses that is equal to or greater than \$345,000,000 but less than \$510,000,000; and
- (3) C is the product obtained by multiplying 0.11% by the portion of the appropriations provided for in the budget for operating expenses that is equal to or greater than \$510,000,000.

Where the budget of the municipality provides for appropriations for operating expenses related to the operation of a system of production, transmission or distribution of electric power, 50% only of those appropriations shall be taken into account in establishing the total of the appropriations referred to in the second paragraph.

2001, c. 25, s. 15; 2001, c. 68, s. 5; 2018, c. 8, s. 39.

c. – Mandate
2018, c. 8, a. 40.

107.6. The chief auditor is responsible for the application of the municipality's policies and standards relating to the management of the human, material and financial resources assigned to auditing.

2001, c. 25, a. 15.

107.6.1. Despite section 8 of the Act respecting Access to documents held by public bodies and the Protection of personal information ([chapter A-2.1](#)), the chief auditor shall perform the duties conferred by that Act on the person in charge of access to documents or the protection of personal information with regard to the documents the chief auditor prepares in performing his duties or with regard to the documents he keeps for the purposes of his mandate, provided the latter documents are not also kept by a body subject to that Act.

The chief auditor shall transmit without delay to the person in charge of access to documents or the protection of personal information within a concerned body any application he receives concerning documents that are also kept by the body.

2018, c. 8, s. 41.

- 107.7.** The chief auditor shall audit the accounts and affairs:
- (1) of the municipality;
 - (2) of every legal person
 - a) that is part of the reporting entity defined in the municipality's financial statements;
 - b) of which the municipality or a mandatary of the municipality appoints more than 50% of the members of the board of directors; or
 - c) of which the municipality or a mandatary of the municipality holds more than 50% of the outstanding voting shares or units;
 - (3) of any body referred to in the first paragraph of section 573.3.5, provided
 - a) in the case of a body referred to in subparagraph 1 of the first paragraph of that section, it is the mandatary or agent of the municipality;
 - b) under subparagraph 2 of the first paragraph of that section, the majority of the members of its board of directors are members of the council of, or are appointed by, the municipality;
 - c) its budget is adopted or approved by the municipality;
 - d) in the case of a body referred to in subparagraph 4 of the first paragraph of that section, it receives part or all of its financing from the municipality; or
 - e) or in the case of a body designated under subparagraph 5 of the first paragraph of that section, it has its principal place of business in the territory of the municipality.

If, under this section, section 108.2.0.1, article 966.2.1 of the Municipal Code of Québec ([chapter C-27.1](#)) or section 86 of the Act respecting the Commission municipale ([chapter C-35](#)), a mandate to audit certain aspects of the accounts and affairs of a body referred to in section 573.3.5 is entrusted to more than one auditor, the audit of those aspects must be conducted exclusively by the following designated auditor:

- (1) the chief auditor of the municipality with the largest population;
- (2) if no chief auditor of a municipality is concerned, the Commission municipale du Québec;
- (3) if neither a chief auditor of a municipality nor the Commission is concerned, the external auditor of the municipality with the largest population

2001, c. 25, s. 15; 2010, c. 18, s. 20; 2018, c. 8, s. 42.

107.8. The audit of the affairs and accounts of the municipality and of any legal person or body referred to in subparagraph 2 or 3 of the first paragraph of section 107.7 includes, to the extent considered appropriate by the chief auditor, financial auditing, auditing for compliance of their operations with the Acts, regulations, policies and directives, and auditing for value-for-money.

The audit must not call into question the merits of the policies and objectives of the municipality or legal persons or bodies referred to in subparagraph 2 or 3 of the first paragraph of section 107.7.

The chief auditor in the performance of his duties is authorized

- (1) to examine any document concerning the affairs and accounts relating to the objects of the audit ;
- (2) to require from any employee of the municipality or any legal person or body referred to in subparagraph 2 or 3 of the first paragraph of section 107.7 all information, reports and explanations the chief auditor considers necessary.

2001, c. 25, s. 15; 2001, c. 68, s. 6; 2018, c. 8, s. 43.

107.9. Any legal person receiving an annual subsidy from the municipality of at least \$100,000 is required to have its financial statements audited.

The auditor of a legal person not referred to in paragraph 2 of section 107.7 that receives an annual subsidy from the municipality of at least \$100,000 shall transmit to the chief auditor a copy of

- (1) the annual financial statements of the legal person;
- (2) the auditor's report on the statements;
- (3) any other report summarizing the auditor's findings and recommendations to the board of directors or the officers of the legal person.

That auditor shall also, on the request of the chief auditor

- (1) place at the disposal of the chief auditor any document relating to the auditor's audit and its results;
- (2) provide all information and explanations the chief auditor considers necessary concerning the auditor's audit and its results.

Where the chief auditor considers that the information, explanations and documents provided by an auditor under the second paragraph are insufficient, the chief auditor may conduct such additional audit as he considers necessary.

2001, c. 25, s. 15.

107.10. The chief auditor may conduct an audit of the accounts or documents of any person or body having received financial assistance from the municipality or from a legal person or body referred to in subparagraph 2 or 3 of the first paragraph of section 107.7 to verify the use made of such assistance.

The municipality and the person or body having received the financial assistance are required to furnish to or place at the disposal of the chief auditor any accounts and documents that the chief auditor considers relevant to the performance of the chief auditor's duties.

The chief auditor is authorized to require from any officer or employee of the municipality or from any person or body having received financial assistance any information, reports and explanations the chief auditor considers necessary to the performance of the chief auditor's duties.

2001, c. 25, s. 15; 2018, c. 8, s. 44.

107.11. The chief auditor may conduct an audit of the pension plan or pension fund of a pension committee of a municipality or a legal person referred to in paragraph 2 of section 107.7 where the committee requests the chief auditor to do so with the approval of the council.

2001, c. 25, s. 15.

107.12. The chief auditor shall, every time the council so requests, investigate and report on any matter within the competence of the chief auditor. In no case, however, may the investigation take precedence over the primary responsibilities of the chief auditor.

2001, c. 25, s. 15.

d. — Reporting
2018, c. 8, s. 45.

107.13. Not later than 31 August each year, the chief auditor shall transmit a report presenting the results of the audit for the fiscal year ended on 31 December to the mayor of the municipality, or to the legal person or body, that was audited.

A report on the audit of a legal person or body shall also be transmitted to the mayor of a municipality related to the legal person or body under subparagraph 2 or 3 of the first paragraph of section 107.7, subparagraph 4 or 5 of the first paragraph of section 85 of the Act respecting the Commission municipale ([chapter C-35](#)), or subparagraph 2 or 3 of the first paragraph of article 966.2 of the Municipal Code of Québec ([chapter C-27.1](#)).

Where applicable, the report must also indicate any fact or irregularity concerning, in particular,

- (1) control of revenue including assessment and collection;
- (2) control of expenditure, including authorization, and compliance with appropriations;
- (3) control of assets and liabilities including related authorizations;
- (4) accounting for operations and related statements;
- (5) control and safeguard of property owned or administered;
- (6) acquisition and utilization of resources without sufficient regard to economy or efficiency;
- (7) implementation of satisfactory procedures to measure and report effectiveness in cases where it is reasonable to do so.

The chief auditor may also, at any time, transmit to the mayor of a municipality or to a legal person or body a report presenting his findings and recommendations. Such a report concerning a person or body must also be transmitted to the mayor of a municipality related to the person or body under the provisions mentioned in the second paragraph

The mayor of a municipality shall file any report he receives under this section at the first regular sitting of the council following receipt of the report.

2001, c. 25, s. 15; 2010, c.18, s. 21; 2018, c. 8, s. 46.

107.14. (*Repealed*).

2001, c. 25, s. 15; 2006, c. 31, s. 16; 2010, c. 18, s. 22; 2017, c. 13, s. 50; 2018, c. 8, s. 47.

107.15. (*Repealed*).

2001, c. 25, s. 15; 2018, c. 8, s. 47.

e. – Immunity
2018, c. 8, s. 48.

107.16. Notwithstanding any general law or special Act, neither the chief auditor nor the employees under the chief auditor’s direction or the professionals under contract may be compelled to give testimony relating to any information obtained in the performance of their duties or to produce any document containing such information.

Neither the chief auditor nor the employees under the chief auditor’s direction may be prosecuted by reason of any act they have done or failed to do in good faith in the performance of their duties.

No civil action may be instituted by reason of the publication of a report of the chief auditor prepared under this Act or of the publication in good faith of an extract or summary of such a report.

Except on a question of jurisdiction, no application for judicial review under the Code of Civil Procedure ([chapter C-25.01](#)) may be exercised nor any injunction granted against the chief auditor, the employees under the chief auditor’s direction or the professionals under contract acting in their official capacity.

A judge of the Court of Appeal, on an application, may summarily annul any proceeding instituted or decision rendered contrary to the provisions of the first paragraph.

2001, c. 25, s. 15; I.N. 2016-01-01 (NCCP).

107.17. The council may establish an audit committee and determine its composition and powers.

Despite the first paragraph, in the case of the urban agglomeration of Montréal, the council must establish an audit committee composed of not more than 10 members appointed on the proposal of the mayor of the central municipality. Two of the committee members must be council members representing the reconstituted municipalities. Those two members shall take part in deliberations and votes of the committee on any matter related to an urban agglomeration power.

In addition to the other powers that may be entrusted to it, the committee established in the case of the urban agglomeration of Montréal shall submit opinions to the urban agglomeration council on the requests, findings and recommendations of the chief auditor concerning the urban agglomeration. It shall also inform the chief auditor of the interests and concerns of the urban agglomeration council with respect to the audit of the accounts and affairs of the central municipality. On an invitation by the committee, the chief auditor or a person designated by the chief auditor may attend a sitting and take part in deliberations.

2001, c. 25, s. 15; 2008, c. 19, s. 11; 2009, c. 26, s. 19.

V. — External auditor
2001, c. 25, s. 16.

108. The council shall appoint an external auditor for not less than three nor more than five fiscal years. At the end of the term, the external auditor shall remain in office until replaced or reappointed.

In the case of a municipality with a population of at least 10,000 but less than 100,000 inhabitants, the council may appoint two external auditors. In such a case, the council shall entrust one auditor with the audit mandates under section 108.2 and the other with the audit mandate under section 108.2.0.1.

Every external auditor must be a member of the Ordre des comptables professionnels agréés du Québec.

When carrying out their value-for-money audit mandate and despite any general law or special Act, neither an external auditor nor the employees under the external auditor's direction or the professionals under contract may be compelled to give testimony relating to any information obtained in the performance of their duties or to produce any document containing such information. A judge of the Court of Appeal may, on an application, summarily annul any proceeding instituted or decision rendered contrary to this paragraph.

Neither an external auditor nor the employees under the external auditor's direction may be prosecuted for any act they have done or failed to do in good faith in the performance of the duties related to their value-for-money audit mandate.

No civil action may be instituted for the publication of a report of an external auditor prepared under this Act in connection with a value-for-money audit mandate or the publication in good faith of an extract or summary of such a report.

Except on a question of jurisdiction, no application for judicial review under the Code of Civil Procedure ([chapter C-25.01](#)) may be exercised nor any injunction granted against an external auditor, the employees under the external auditor's direction or the professionals under contract when the external auditor, employees or professionals are acting in their official capacity in connection with their value-for-money audit mandate.

R. S. 1964, c. 193, s. 104; 1975, c. 66, s. 11; 1984, c. 38, s. 11; 1995, c. 34, s. 12; 1996, c. 27, s. 12; 1999, c. 43, s. 13; 2001, c. 25, s. 17; 2003, c. 19, s. 110, s. 250; 2005, c. 28, s. 196; 2009, c. 26, s. 109; 2016, c. 17, s. 8; 2018, c. 8, s. 49.

108.1. If the office of the external auditor becomes vacant before the expiry of his term, the council shall fill the vacancy as soon as possible.

1984, c. 38, s. 11; 2001, c. 25, s. 18; 2003, c. 19, s. 111.

108.2. The external auditor of a municipality having less than 100,000 inhabitants, or the external auditor designated by the council where two external auditors have been appointed, shall audit, for the fiscal year for which he was appointed,

- (1) the financial statements of the municipality and of any legal person referred to in subparagraph 4 of the first paragraph of section 85 of the Act respecting the Commission municipale (chapter C-35) that is related to the municipality in the manner provided for in that subparagraph;
- (2) the effective aggregate taxation rate to verify its compliance with Division III of Chapter XVIII.1 of the Act respecting municipal taxation (chapter F-2.1);
- (3) any document determined by the Minister of Municipal Affairs, Regions and Land Occupancy by a regulation published in *the Gazette officielle du Québec*.

1984, c. 38, s. 11; 1996, c. 2, s. 209; 1999, c. 43, s. 13; 2001, c. 25, s. 19; 2003, c. 19, s. 250; 2005, c. 28, s. 196; 2006, c. 31, s. 17; 2009, c. 26, s. 109; 2017, c. 13, s. 51; 2018, c. 8, s. 50.

108.2.0.1. In addition to his mandate under section 108.2, the external auditor of a municipality having at least 10,000 but less than 100,000 inhabitants, or the designated auditor, as applicable, shall conduct, to the extent he considers appropriate, a value-for-money audit of the municipality and of any legal person or any body referred to in subparagraph 4 or 5 of the first paragraph of section 85 of the Act respecting the Commission municipale (chapter C-35) that is related to the municipality in the manner provided for in that subparagraph.

Such an audit must be completed once every two years.

The auditor shall report to the council on his audit.

If, under this section, section 107.7, article 966.2.1 of the Municipal Code of Québec (chapter C-27.1) or section 86 of the Act respecting the Commission municipale, a mandate to audit certain aspects of the accounts and affairs of a body referred to in the first paragraph of section 573.3.5 is entrusted to more than one auditor, the audit of those aspects must be conducted exclusively by the following designated auditor:

- (1) the chief auditor of the municipality with the largest population;
- (2) if no chief auditor of a municipality is concerned, the Commission municipale du Québec; or
- (3) if neither a chief auditor of a municipality nor the Commission is concerned, the external auditor of the municipality with the largest population.

2018, c. 8, s. 51.

108.2.0.2. A municipality referred to in section 108.2.0.1 may, by by-law, entrust to the Commission municipale du Québec the audit mandate provided for in that section. An authenticated copy of the by-law must be transmitted to the Commission without delay.

A by-law made under the first paragraph applies from the fiscal year following that of its coming into force, provided it comes into force before 1 September; if it does not, the by-law applies from the second fiscal year following that of its coming into force. Section 108.2.0.1 ceases to apply to the municipality's external auditor as of that fiscal year.

Despite the third paragraph of section 86 of the Act respecting the Commission municipale ([chapter C-35](#)), the audit mandate entrusted to the Commission by a by-law adopted under this section must be carried out once every two years.

The by-law may not be repealed.

2018, c. 8, s. 51.

108.2.1. The external auditor of a municipality having 100,000 inhabitants or more shall audit, for the fiscal year for which he was appointed,

- (1) the accounts and affairs of the chief auditor;
- (2) the financial statements of the municipality and of any legal person referred to in subparagraph 2 of the first paragraph of section 107.7;
- (3) the effective aggregate taxation rate to verify its compliance with Division III of Chapter XVIII.1 of the Act respecting municipal taxation ([chapter F-2.1](#)); and
- (4) any document determined by the Minister of Municipal Affairs, Regions and Land Occupancy by a regulation published in the *Gazette officielle du Québec*.

2001, c. 25, s. 20; 2001, c. 68, s. 7; 2003, c. 19, s. 250; 2005, c. 28, s. 196; 2009, c. 26, s. 109; 2017, c. 13, s. 52; 2018, c. 8, s. 52.

108.2.2. An audit conducted by an external auditor must not call into question the merits of the policies and objectives of the municipality or of a person or body whose accounts and affairs are being audited.

2018, c. 8, s. 53.

108.3. Each year, not later than on the date determined by the municipal council, the external auditor shall transmit any report for the preceding fiscal year that was made under section 108.2, 108.2.0.1 or 108.2.1 to the treasurer of the municipality concerned or to the legal person or body concerned.

Any report on the audit of a legal person or a body must also be transmitted to the mayor of a municipality related to the legal person or body under subparagraph 2 or 3 of the first paragraph of section 107.7 or under subparagraph 4 or 5 of the first paragraph of section 85 of the Act respecting the Commission municipale (chapter C-35).

Any report made under section 108.2.0.1 on the value-for-money audit of a municipality having at least 10,000 but less than 100,000 inhabitants must also be transmitted to the Commission municipale du Québec not later than 30 September following the last fiscal year to which the report pertains. The Commission shall publish the report on its website.

The treasurer of a municipality shall file any report he receives under this section at the first regular sitting of the council following receipt of the report.

1984, c. 38, s. 11; 2001, c. 25, s. 21; 2010, c. 18, s. 23; 2017, c. 13, s. 53; 2018, c. 8, s. 54.

108.4. The council may require any other audit it considers necessary, and require a report.

However, a council may not ask the external auditor for audits that fall under the mandate assigned to the Commission municipale du Québec under the Act respecting the Commission municipale (chapter C-35).

1984, c. 38, s. 11; 2018, c. 8, s. 55.

108.4.1. The external auditor shall have access to the books, accounts, securities, documents and vouchers and may require the employees of the municipality to furnish any information and explanations necessary for the performance of the external auditor's mandate.

2001, c. 25, s. 22.

108.4.2. The chief auditor shall place at the disposal of the external auditor all books, statements and other documents prepared or used by the chief auditor during the audit conducted under section 107.7 and that the external auditor considers necessary to carry out his mandate.

2001, c. 25, s. 22; 2005, c. 28, s. 49.

- 108.5.** In no case may the following persons act as external auditor of the municipality;
- (1) a member of the council of the municipality and, where applicable, of a borough council;
 - (2) an officer or an employee of the municipality;
 - (3) the associate of a person mentioned in paragraph 1 or 2;
 - (4) a person who, during the fiscal year for which the audit is carried out, has, directly or indirectly, personally or through his associate, any participation, interest or commission in or under a contract with the municipality or in respect of such a contract, or who derives any benefit from the contract, unless his connection with the contract arises from the practice of his profession.

1984, c. 38, s. 11; 1996, c. 2, s. 209; 1999, c. 40, s. 51; 2001, c. 25, s. 23.

- 108.6.** The external auditor may be an individual or a partnership. The external auditor may entrust his employees with his work but his responsibility is then the same as if he had performed all the work personally.

1984, c. 38, s. 11; 1999, c. 40, s. 51; 2001, c. 25, s. 24.

VII. — Director general

- 113.** The director general is the chief officer of the municipality.

The director general has authority over all the other officers and employees of the municipality, except the chief auditor, who reports directly to the council. With respect to an officer or employee whose duties are prescribed by law, the authority of the director general is exercised only within the framework of his duties as the administrator of human, material and financial resources of the municipality and may in no case hinder the carrying out of duties that are prescribed by law.

The director general may suspend an officer or employee from his duties. He shall immediately make a report of the suspension to the council. The council shall decide the case of the suspended officer or employee, after inquiry.

R. S. 1964, c. 193, s. 109; 1968, c. 55, s. 5; 1983, c. 57, s. 50; 2001, c. 25, s. 27.



8.2.

Report of the Independent Auditor

2020 ANNUAL REPORT

Auditor General of the Ville de Montréal

Accounts statement of the Bureau du vérificateur général of the Ville de Montréal

Year ended December 31, 2020

Independent Auditor's Report

To the Mayor,
the Chairman and Members of the Executive Committee,
the Members of the Municipal Council of the Ville de Montréal, and
the Members of the Agglomeration Council of the Ville de Montréal

Opinion

We have audited the accounts statement of the Bureau du vérificateur général of the Ville de Montréal (the "Bureau du vérificateur général") for the year ended December 31, 2020, and the note to the statement, including a summary of significant accounting policies (collectively referred to as the "statement").

In our opinion, the accompanying statement for the year ended December 31, 2020, is prepared, in all material respects, in accordance with the basis of accounting described in Note 1 to the statement.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards ("Canadian GAAS"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Statement* section of our report. We are independent of the Ville de Montréal in accordance with the ethical requirements that are relevant to our audit of the statement in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter – Basis of Accounting

We draw attention to Note 1 to the statement, which describes the basis of accounting. The statement is prepared to assist the Bureau du vérificateur général to meet the requirements of the section 108.2.1 of the *Cities and Towns Act*. As a result, the statement may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Responsibilities of Management for the Statement

Management of the Bureau du vérificateur général is responsible for the preparation of the statement in accordance with the basis of accounting described in Note 1, and for such internal control as management determines is necessary to enable the preparation of a statement that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities for the Audit of the Statement

Our objectives are to obtain reasonable assurance about whether the statement is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian GAAS will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this statement.

As part of an audit in accordance with Canadian GAAS, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the statement, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Bureau du vérificateur général's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates, if any, and related disclosures made by management.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Deloitte LLP

April 15, 2021

¹ CPA auditor, CA, public accountancy permit No. A116207

Bureau du vérificateur général of the Ville de Montréal

Accounts statement

Year ended December 31, 2020

(In thousands of dollars)

	2020⁽¹⁾	2020	2019
	Budget	Actual	Actual
	\$	\$	\$
Compensation of personnel	5,181	4,935	4,241
Professional, technical and administrative services	1,114	547	588
Other operating expenses	109	76	147
Total	6,404	5,558	4,976

⁽¹⁾ Approved budget, as modified, presented in the accounting system of the Ville de Montréal for the Bureau du vérificateur général and adopted by the municipal council and the agglomeration council of the Ville de Montréal.

1. Accounting policy

This accounts statement of the Bureau du vérificateur général was prepared in accordance with the recognition and measurement principles of Canadian public sector accounting standards, according to the same accounting policies described in Note 2 to the consolidated financial statements of the Ville de Montréal for the year ended December 31, 2020, with the exception that fixed assets are not capitalized and amortization that would result from them is not considered.

