Vérificateur général
de la Ville de Montréal

REPORT OF THE AUDITOR GENERAL OF THE VILLE DE MONTRÉAL

FOR THE YEAR ENDED DECEMBER 31, 2016

TO THE CITY COUNCIL AND TO THE URBAN AGGLOMERATION COUNCIL

HIGHLIGHTS

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 O*ffice 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.

This report is available on our website at: bvgmtl.ca.

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List of Acronyms

BVG	Bureau du vérificateur général
CTA	*Cities and Towns Act*
ICI	industries, companies and institutions
MAMOT	Ministère des Affaires municipales et de l'Occupation du territoire
QSDWC	Québec Strategy for Drinking Water Conservation
SERAM	Système évolué de radiocommunication de l'agglomération de Montréal
SIG RH-Paie	Système intégré de gestion des ressources humaines et de la paie
SIRH	Système intégré en RH
STI	Service des technologies de l'information

In addition to my annual report for the year 2016, this summary document presents its highlights.

1. Introduction

The *Cities and Towns Act* (CTA) requires that Québec municipalities with 100,000 or more residents have an Auditor General. The Auditor General provides city council with an accurate picture of whether the municipal administration is making wise and optimal use of public funds.

The Auditor General mandate includes, to the extent it deems appropriate, financial audit, legal and regulatory compliance audit and value-for-money audit of the Ville de Montréal (the city) and of the organizations covered by the section 107.7 of the CTA within the minimum budget limits imposed in section 107.5 of the CTA.

Pursuant to the CTA, no later than August 31 every year, the Auditor General must forward to the Mayor, for deposit to the city council, the results of its audits for the fiscal year ending on the previous December 31.

2. Observations of the Auditor General

I took office on August 15, 2016 for a term of seven years. This report is therefore my first annual report as Auditor General of the city.

2.1. Challenges of the Bureau du vérificateur général

2.1.1. Human Resources

Soon after taking office, I spent some time meeting with each employee to properly determine the issues facing the Bureau du vérificateur général (BVG). I could see that the team in place had done some high quality work over the years and that its considerable experience represented a major asset for the BVG.

However, we will be losing much of that expertise over the next few years. Nearly 20% of the team is eligible for retirement, including two of the four members of the management. As mentioned in my predecessor's 2015 report, the BVG faces a major issue in terms of succession management.

Also, for several years, there have been vacancies and the many attempts to recruit candidates have not yielded satisfactory results. Initiatives undertaken in the past, in consultation with the Service des ressources humaines, to find solutions to the problem of retaining expertise have not led to concrete strategies and measures.

Over the next year, we will review these approaches and undertake new initiatives to try to address these issues of succession planning and retaining knowledge within the BVG.

Some initiatives have already been undertaken. For instance, to handle the financial audit files, we set up teams consisting of two advisers, one principal and one for backup, for each mandate. We are also starting a project to develop a new risk matrix for the BVG.

2.1.2. Other Challenges

Beyond the human resources issues cited above, there will be many more challenges during the coming years. The Government of Québec's desire to make municipalities more autonomous and changes to standards in value-for-money audits are a few such examples.

We will also undertake a series of projects to enable us, in the medium term, to provide strategic planning for the BVG, update our work tools and complete the development of our website.

Bill 122

With the draft Bill 122, the Government of Québec is aiming to transform the municipalities into real local governments and to redefine municipal institutions in light of current issues by giving them more autonomy, flexibility and power.

To this end, in its address notes to the Commission de l'aménagement du terrritoire, the Association of Municipal Auditors General of Québec indicated that the new measures proposed under Bill 122 must be supported by rigorous measures of governance and accountability.

It is important to remember that the Auditor General is one of the essential pillars of municipal governance; the Auditor General is there to provide reassurance to the elected officials and the citizens that public funds are being managed efficiently, effectively and economically.

Beyond this bill, sections of the CTA concerning the Auditor General must also be reviewed in light of today's issues to allow the Auditor General to perform its job independently, without any legal interpretation of its role, the possibility of interference in its work or the management of funds allocated to it.

Over the next year, we will follow developments related to this issue, which will have an impact on the work of municipal auditors general.

Standards for Direct Engagements (CSAE 3001)

In 2017 we are conducting value-for-money audit mandates, having revised our working methodology to comply with the new Canadian assurance standards developed by the Chartered Professional Accountants of Canada for direct engagements. This will change our ways of conducting value-for-money audits, primarily in the stages of preliminary analysis, quality control and in the standards for issuing reports.

3. Financial Statement Audits and Other Reports

3.1. Introduction

The Auditor General conducts its audits in accordance with Canadian generally accepted auditing standards. The audit is planned and constructed 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 financial statements presentation.

3.2. Consolidated Financial Statements of the Ville de Montréal

In accordance with the provisions of the CTA in force on December 31, 2016, we audited the city's financial statements.

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.

On April 3, 2017, I issued an unqualified auditor's report on the consolidated financial statements of the city as of December 31, 2016. It should be noted that the city's external auditor has issued a qualified opinion on the city's financial statements. The difference of opinion between the city, the Auditor General and Deloitte involves accounting for government transfers.

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 April 19, 2017.

Also, on April 13, 2017, reports on the city's consolidated financial statements, on the breakdown of mixed expenditures and on the city's aggregate taxation rate were produced and recorded on the form required by Ministère des Affaires municipales et de l'Occupation du territoire (MAMOT). In accordance with the provisions of the CTA, the form required by MAMOT, along with the three above-mentioned Auditor General's reports and the joint auditor's report on the consolidated financial statements were filed with city council and the urban agglomeration council before being sent to MAMOT on April 24, 2017.

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

Pursuant to section 107.7 of the CTA, the Auditor General is required to audit the financial statements of other legal entities subject to the CTA that 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.

As of May 25, 2017, 12 independent auditor's reports had been issued on the December 31, 2016 financial statements for the organizations to be audited by the Auditor General under the provisions of section 107.7 of the CTA.

4. Legal and Regulatory Compliance

4.1. Legal Compliance of Organizations Having Received a Subsidy of at Least $100,000

In accordance with section 107.9 of the CTA, *"any legal person who receives 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.

Objective and Scope of the Mandate

Our mandate was to ensure that every legal person that, in 2015, received a subsidy of at least $100,000 from the city was complying with the provisions of section 107.9 of the CTA with regard to submitting a copy of its audited financial statements to the Auditor General.

Conclusion

In 2015, the city disbursed a total of $191.1 million including $108.7 million (i.e. 57%) to 187 organizations that received subsidies adding up to at least $100,000, and to which the requirements of section 107.9 of the CTA apply.

By May 12, 2017, the BVG had received the 2015 audited financial statements of 176 (i.e. 94%) of the 187 organizations affected by this requirement under the CTA, for a total of $104.9 million.

We encourage the city to continue its efforts to make organizations aware of the requirements of section 107.9 of the CTA.

5. Value-for-Money and Information Technology Audit

5.1. Management of the Emerald Ash Borer and the Canopy

Background

The emerald ash borer is an insect originating from Asia that attacks all types of ash trees, causing the death of the tree within a few years. In 2012, the city estimated at 1.2 million the number of trees of all species planted in the public domain.[1] Of this number, the ash population was estimated at nearly 20%, a little over 200,000 trees threatened with destruction by the insect.

The city has adopted an approach seeking to slow the progression of emerald ash borer in its territory and gain time to reduce its impacts. Thus, the *Plan d'action Montréalais de lutte à l'agrile du frêne 2012-2015,* deployed by the city since 2012, is articulated around the *"Slow Ash Mortality"* strategy. This consists of slowing the insect's progression by detecting and treating outbreaks as soon as possible with a biopesticide. This strategy offers the advantage, in particular, of spreading the costs of tree felling and replacement over time instead of clear-cutting all ash trees.

Purpose of the Audit

The purpose of the audit conducted was to evaluate the measures with which the city deployed a strategy governing management of the problem related to the emerald ash borer in the territory of the Montréal agglomeration.

Conclusion

The appearance in 2011 of the emerald ash borer in Montréal's territory undoubtedly represented a major challenge. Indeed, the city's sustainable development directions sought to enhance the canopy by 5% over a 10-year horizon,[2] whereas ash trees represented a significant portion of its arboreal stock (one tree in five was an ash) and no solutions existed (and still do not exist to date) to eradicate the emerald ash borer completely.

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1 These trees in the public domain occupy space on the public thoroughfare along streets, in parks (off-street) or in the natural environment (woodlands). In opposition, trees in the private domain are planted on land belonging to individuals, industries, businesses or institutions (e.g., universities, hospitals).

2 The *Plan d'action canopée 2012-2021* envisioned the additional planting of 75,000 trees in the public domain, in addition to the 23,000 planted on the average by the boroughs under their regular planting program and the 142,000 trees in the private domain.

Thus, starting in 2012, while countering the negative impacts associated with canopy loss,[3] the action plan deployed by the city to fight this plague sought to gain time by slowing the insect infestation, while offering the benefit of spreading over time the costs associated with massive felling of ash trees and their replacement over a short period. In 2014, the financial setup developed by the city revealed the fight against the emerald ash borer and, concurrently, the efforts to enhance the canopy, could generate expenditures then estimated at approximately $294 million up to 2028, without considering the cost of the actions undertaken within the boroughs.

Since then, we have been able to recognize the considerable efforts deployed by the city to fight the insect infestations and tend to enhance the canopy. In particular, several contracts totalling approximately $30 million have been awarded since 2013 to external firms in relation to detection, treatment and planting work.

Nonetheless, we must recognize it is difficult to date to assess the extent to which the strategy deployed by the city is working efficiently and contributing to the achievement of the objectives. On the one hand, no assessment or formal diagnosis exists to date presenting the overall picture of the progress of the situation, given the targets established and incorporated into the 2014 financial setup against the emerald ash borer and, concurrently, achieve the canopy enhancement targets. On the other hand, the operations performed and the evaluation of the recognized results are not documented sufficiently. Periodic tracking of the progress of operations currently tends to be done informally instead of being part of a well-defined accountability process.

Whether they concern interventions against the emerald ash borer or interventions related to canopy enhancement, the facts recognized reveal the necessity of reassessing the direction of the strategy deployed in order to ensure coherence, accounting for the objectives. For example, the following aspects will have to be considered:

- Systematic renewal of ash tree injections every two years, as recommended, has not been planned by the Service des grands parcs, du verdissement et du Mont-Royal. This exposes the city to the risk the insect will regain the upper hand and that a large proportion of the ash trees initially treated during a first round will have to be felled and replaced more quickly. As applicable, it thus will be necessary to decide what proportion of ash trees the city wishes to include in a long-term protection program;
- The late planting of additional trees necessary to meet the canopy enhancement target of 5% by 2025 and the problem related to the identification of new planting sites in the territory, combined with the fact the *Plan d'action canopée 2012-2021* did not really account for the magnitude of the damage caused by the insect infestation;

[3] In particular, increase in heat islands, decrease in air quality, impairment of neighbourhood esthetics and property values.

- The problem associated with the non-enforcement of By-law 15-040 *By-law to stop the spread of the emerald ash borer on the territory of Montréal* concerning ash trees in the private domain, which represent approximately 22% of all ash trees in Montréal territory, and low interest of citizens in the financial assistance program instituted for the treatment of ash trees on their property (By-law 15-063 *By-law concerning the subsidy for the treatment of ash trees located on private property in high-risk areas*). The inaction in the private domain could have contributed to lessen the city's efforts to fight the insect in the public domain.

We find the Service des grands parcs, du verdissement et du Mont-Royal will have to prove the extent to which the strategy deployed has made it possible to counter the insect invasion and achieve the objectives enabling the municipal administration to decide what strategy to put forward to meet the new targets. Consequently, an updated action plan based on the actual results obtained should be drafted and formally approved, which invariably will have an impact on the financial framework. In particular, the investments will have to be adjusted according to the operational rhythm sought to achieve the annual and long-term targets. Agreements will also have to be made with the boroughs to favour the achievement of common objectives.

Finally, citizens are increasingly aware of the importance of the environment and want public administrations to become more involved to provide them with a pleasant living place. The city's sustainable development plan, *Montréal durable 2016-2020*, sets out directions in this sense. However, it must be demonstrated that this plan is respected in the context of the established budget constraints, and that the best decisions are made to achieve it. Both the public domain and the private domain will have to contribute to this collective reforestation effort.

5.2. Sustainable Water Management

Background

Water is one of the central issues of the 21st century. Globally, the freshwater needed to sustain life and to develop the living world represents only a very small proportion of the total water covering the earth.

Several countries have introduced water protection measures, notably the United States and the European Union member countries. In 2002, the Government of Québec came up to speed by adopting the *Québec Water Policy*. Commitment 49 of this policy expressed a determination *"to develop a Québec strategy for the conservation of drinking water which makes the allocation of any financial assistance contingent upon the adoption, by municipalities, of measures to conserve water and reduce leakage"*.

In March 2011, the Government of Québec adopted the Québec Strategy for Drinking Water Conservation (QSDWC), its goals are: *[TRANSLATION] "To aim for a reduction of at least 20% of the average water consumption per person for Québec as a whole and a reduction in leakage losses to no more than 20% of the total volume of water produced"*. According to the Government of Québec, these are the two main factors contributing to an abnormally high consumption of drinking water across the province. The government subsequently added five measures to these two goals, which need to be implemented by the municipalities in order to take advantage of the financial assistance provided for water infrastructure projects.

In this context, it was important that the city put in place monitoring and evaluation mechanisms that would enable it to ensure compliance with QSDWC and to integrate them into Montréal's Water Strategy action plan.

Purposes of the Audit

The purpose of this audit was to ensure that the action plan adopted within the framework of Montréal's Water Strategy would enable the city to meet the goals and measures set out by MAMOT as part of the implementation of QSDWC in relation to the *Québec Water Policy*.

This audit was also aimed at ensuring the application of the current regulations concerning the use of drinking water by the boroughs.

Conclusion

Since the issues raised by the question of sustainable water management are central to some of our major concerns in the 21st century, both locally and globally, the Government of Québec, through the QSDWC, has set two goals supported by five measures aimed at incentivizing municipalities to achieve significant savings in drinking water consumption and costs.

The Government of Québec has sent a clear message to the municipalities by making the allocation of financial assistance conditional on achieving these two objectives.

For the city, this assistance amounted to $157.4 million for investment projects related to drinking water infrastructure from 2011 to 2015.

In the wake of sustainable water management, Montréal's Water Strategy, approved in 2012, included aspects that would fulfill the requirements of QSDWC, which was adopted in 2011.

Our audit, with regard to the actions that the Service de l'eau has put in place, confirms that major efforts have made it possible to reduce the total production and average distribution of drinking water per person per day, by 20% and 26% respectively in 2015 across the agglomeration, compared with 2001. It should be noted, however, that additional efforts will have to be made as the Canadian average for drinking water distribution has declined significantly over the years. Indeed, it dropped from 622 litres per person per day in 2001 to 466 litres per person per day in 2013. The same indicator for the Montréal agglomeration shows a decrease in average production from 1,120 litres per person per day in 2001 to 823 litres per person per day in 2015. There is therefore a significant gap to be closed in these two results.

QSDWC's second goal comprises two components. For the first component, the 2015 Drinking Water Use Report indicates that the potential water loss rate obtained in 2015 is estimated at 31%, whereas QSDWC's goal was to achieve less than 20% of the water volume distributed. For the second component, the leakage rate is estimated at 98 cubic metres per day per kilometre of water line, considerably exceeding the targeted leakage rate under QSDWC of 15 cubic metres per day per kilometre of water line. As a result of these high numbers, all of the measures provided for in QSDWC will be applied to the city.

Moreover, with regard to these figures, our audit work has highlighted the fact that the city did not include a specific action plan concerning QSDWC in the general action plan of Montréal's Water Strategy. As a result, the planning tool does not reflect all of the choices the city needs to make to fulfill the requirements of all the measures, and is accompanied by schedules that do not always accord with those set out in QSDWC. In addition, some shortcomings have been observed with respect to compliance with

regulations concerning equipment in industries, companies and institutions (ICI). Also, there is the city's ambiguity in its approach to, and the extent of, water meter installation, which would have made it possible to measure with greater reliability water consumption and losses across the system. Another factor is the city's confusion regarding Measure 4 with respect to user fees.

Our work reveals that a review of the accountability reporting process is necessary, especially as it relies on information that has not been entirely documented. In addition, the issue of Measure 4 on user rates has not been sufficiently clarified in the accountability report regarding QSDWC's requirements. As a result, this accountability report has not properly explained to decision-makers from the outset how this measure would be dealt with. Finally, we did not find an overall performance assessment concerning the implementation of all the measures fulfilling QSDWC's requirements so as to allow discussion on a possible repositioning of the city.

Regarding drinking and water conservation practices in Canada's largest cities, QSDWC states the Montréal had a meter installation rate in ICIs of 23% compared to 100% in Toronto, Vancouver, Ottawa, Edmonton and Winnipeg. According to data from the 2015 Annual Report produced by the Service de l'eau, the installation rate in ICIs was 30% for the Montréal agglomeration. There continues to be a wide gap and much needs to be done to reach the Canadian average in terms of water consumption per person. Studies and data available on this subject indicate an abnormally high level of consumption in Québec, which places it among the heaviest water consuming societies, invariably resulting in high operating costs.

Much work remains to be done to begin fulfilling QSDWC's second goal and to put the required measures in place. This will depend on the will of the administration, as many of the measures require significant investments, including replacement of the primary and secondary systems, the leak detection and repair program, and water meter installation in ICIs.

It is in the city's interest to fulfill QSDWC's requirements if it wishes to avail itself of this significant financial assistance. However, there is still a risk that they will not be met, even though the MAMOT decided to postpone until now the deadline for certain measures.

But beyond this matter of compliance, it is the responsible management of assets and our environmental responsibility regarding drinking water that should be of greatest concern. The administration must ensure that it makes the right choices and prioritizes the directions that are most appropriate for all Montrealers.

5.3. Traffic Light Management (Service des infrastructures, de la voirie et des transports)

Background

The road network of the city is comprised of nearly 2,300 intersections equipped with traffic lights. The city's responsibility for these assets arises, in part, from the *Municipal Powers Act*. As concerns the traffic light network, the city is therefore responsible for installing new traffic light systems, making changes where required and removing, replacing and maintaining the equipment to ensure it works effectively.

In 2004, the city began the first phase of the traffic light upgrading process, to replace the controllers and meet requirements on part of the inventory. The first phase was carried out during the development of a transportation plan for the Island of Montréal, which was adopted by the urban agglomeration council in June 2008. Some of the intervention targets of this plan required the traffic lights to be upgraded.

When the *Transportation Plan* was adopted, it mentioned that after the first phase ended in 2008, a second phase would begin, extending to 2010. Dynamic traffic light management was also planned on four strategic arteries, requiring the traffic lights to be upgraded in advance.

In 2013, the authorities reiterated their commitment to accelerating the installation of pedestrian countdown signals and the number of audio signals. The municipal administration also stepped up its commitment to installing preferential measures for the city buses, extending it from 240 kilometres originally planned in the *Transportation Plan* to 375 kilometres of roads by 2017. A third phase was also launched, in 2015, for intersections in the local network.

Purpose of the Audit

The purpose of the audit was to ensure that the traffic light upgrade projects and the implementation of dynamic management are advancing in step with the priorities approved by the authorities.

Conclusion

The urban agglomeration council's adoption of a multisectoral transportation plan in 2008 clearly demonstrated its intention to deal with issues such as the safety of foot travel, traffic light upgrades, the dynamic management of traffic lights on targeted

thoroughfares, the introduction of transit priority measures and the increased use of bicycles on a cycling network extended to the entire island of Montréal.

With regard to the traffic light upgrades, the Service des infrastructures, de la voirie et des transports, which is responsible for governing this program, has not succeeded in setting up a consistent, articulated program to ensure it is executed within the deadlines set by the authorities.

Despite the fact that, since 2008, contracts of a considerable value have been issued to engineering firms and contractors, many plans and specifications have been prepared and revised, a host of interventions has been conducted on the traffic light systems and major purchases of traffic light components have been made, the Service des infrastructures, de la voirie et des transports is unable to confirm, for all intersections equipped with traffic lights in the city's territory, the level of compliance with the standards required by the law[4] and by internal standards. This is the ultimate finding of this audit, which is confirmed, in particular, by:

- An intersection inventory that is incomplete in terms of numbers, territorial distribution, the specific components of the traffic light system and their compliance with the standards. Despite three different professional services contracts issued for its development, there is still no up-to-date, consolidated database, which means the proportion of intersections that meet the various standards is uncertain;
- A lack of general and detailed planning concerning both the number of intersections to be upgraded and the type of interventions required to ultimately meet the established deadlines. So far, the intersection upgrades had been punctuated by a stream of partial upgrades;
- Non-standard cost monitoring in the department in charge, while creditable tools exist that it could adapt, make more effective and extend to all project managers. Under the current work method, determining the cost of work by intervention and by intersection is a mission that would be hard to achieve;
- Annual programming that reveals major delays in the completion of the work in comparison with the information provided in the decision-making summaries;
- The lack of periodic evaluations of the upgrades in terms of the objectives targeted in the *Transportation Plan* with regard to accident reduction and compliance with standards, despite the fact that the form of the *Transportation Plan* lends itself well to a program made up of subprograms for each major aspect, with short-, medium- and long-term objectives. This would have allowed for the periodic evaluation of the results to measure the achievement of the *Transportation Plan* objectives throughout its implementation period;
- Partial accountability concerning the number of interventions on the intersections, but failure to account for other important aspects of sound management, such as costs, timelines, level of compliance with standards and degree of completion of objectives expected by the authorities since the adoption of the *Transportation Plan*.

[4] The *Highway Safety Code* and the *Canadian Electrical Code*.

Consequently, the initial deadlines and budgets in the *Transportation Plan* were not upheld. In 2008, the preliminary estimates in the *Transportation Plan* projected $42.4 million to upgrade 1,400 intersections equipped with traffic lights. In fact, however, the value of the contracts issued to engineering firms and contractors, as of December 23, 2016, was $65.1 million, and relates to interventions on not quite 750 intersections. Considering the cost of internal labour, $16.0 million must be added, for a total of $81.1 million for the second phase of upgrades. Given that the initially planned upgrades have not been completed at all intersections equipped with traffic lights, that dynamic management of traffic lights has not been implemented and that significant expenses are still required to comply with either the legal requirements or the internal standards stemming from the orientations of the *Transportation Plan* or the priorities of the municipal administration, the city will definitely not be able to meet the deadline imposed by the law (December 31, 2017). It should be mentioned, however, that over the years, new legal requirements were added and that the city added new internal standards to reflect the priorities of the municipal administration. It is practically impossible, at present, to differentiate between the costs incurred by these internal standards and those related to the mandatory standards of the Ministère des Transports, de la Mobilité durable et de l'Électrification des transports.

We believe it is imperative for the management of the traffic light upgrade program to be closely monitored by the Direction générale in order to respect the deadlines, projected costs and target objectives.

5.4. Éco-Quartier Program and Eco-Centres

Background

The mission of the Éco-quartier program is to promote and implant eco-conscious habits among Montrealers in order to improve their living environment through targeted and citizen-driven environmental actions. As a result of the municipal amalgamation in 2002, responsibility ot this program was transferred to the boroughs. Since that time, its management and its financial support have been handled exclusively by the city's boroughs. The boroughs are able to fulfill their responsibilities in this regard through financial contributions made to community non-profit organizations, which are the sponsors of the Éco-quartier program.

It is important to distinguish the éco-quartiers from the eco-centres that exist within the territory of Montréal: the latter are sites made available to all residents, where they can bring waste materials to be recovered and re-used.

Unlike éco-quartiers, which come under local jurisdiction, eco-centres fall under the jurisdiction of the agglomeration. The *Act respecting the exercise of certain powers in certain urban agglomerations* stipulates that the disposal and recovery of waste are agglomeration powers. However, the city's Service de l'environnement assumes this responsibility for all the related cities making up the Montréal agglomeration.

Purposes of the Audit

The purpose of the audit was to ensure that the awarding of contracts to delegated organizations for the management of eco-centres and the transport of waste to recycling or recovery sites is being carried out in an objective, transparent and fair manner.

In addition, the audit aimed to ensure that the amounts allocated by the city to delegated organizations for the management of the Éco-quartier program and the management of eco-centres are subject to a regular reporting process enabling evaluation of the results obtained.

Conclusion

Regarding compliance in the process of awarding contracts for managing the eco-centres, transporting waste recovered from them and supplying containers, the audit revealed certain shortcomings that need to be corrected.

It is a given that public funds must first be managed in compliance with the laws and regulations in force. However, in this context, it must be acknowledged that the managers responsible have to deal with a number of different issues while simultaneously ensuring that competitive tendering procedures are followed, in order to provide citizens with adequate services at the best prices, and also to preserve the principles of fairness and transparency while promoting the greatest possible competition.

We were not able to demonstrate without any doubt the circumvention of established procedures for selecting successful bidders for the period between 2011 and 2016. However, we have to question whether the principles of fairness and transparency that should govern the procedures for soliciting contracts and inviting competition from suppliers were tainted with regard to contracts awarded to the same organization for the management of all of the city's eco-centres. For this reason we consider it appropriate to forward the file to the Bureau de l'inspecteur général of the city, so that it may pursue any investigations it deems appropriate. In light of this, we believe that greater vigilance should dictate the make-up and conduct of the selection committee, to prevent any situations arising that may compromise the impartiality and objectivity of the bid evaluation process.

As for accountability, we consider that the mechanisms established for the management of eco-centres under the authority of the Service de l'environnement make it possible to demonstrate to what extent they are helping to meet the strategic targets of the Montréal agglomeration's sustainable development plan. However, in the case of the Éco-quartier program, which comes under the responsibility of the audited boroughs, this evidence seems to be more difficult to establish since no real documented evaluation has yet been carried out.

5.5. Système évolué de radiocommunication de l'agglomération de Montréal (SERAM) Project

Background

The Système évolué de radiocommunication de l'agglomération de Montréal (SERAM) project results from the need to modernize the radiocommunication network of the Service de police de la Ville de Montréal, which was acquired in 1989 and reached the end of its useful life in 2004. A first call for tenders was launched in June 2008, but having deemed the $179.1 million price proposed by the only compliant bidder too high the city did not proceed with it.

The project scope has afterward been broaden in order to meet the needs of several categories of users throughout the island of Montréal, including those of the public safety services. Calls for tender were issued to that end, in August 2011 and October 2012, concerning Phases 1 and 2 of the project.

Since the provisional acceptance to Phase 1 of the project by the city in September 2014, it has experienced a number of setbacks. The project's management proved very deficient. Also, attempts to deploy with the two main clients, namely the Service de police de la Ville de Montréal and the Service de sécurité incendie de Montréal, highlighted a very worrying problem in the network's reliability. This situation necessitated the implementation of a remedial plan.

Purpose of the Preliminary Audit Study

The purpose of our preliminary audit study was to corroborate Service des technologies de l'information's (STI) diagnostic conclusions and to ensure that the current remedial plan would be relevant and functional in remedying the SERAM project's management problems, stabilizing the network's reliability, and mitigating the risks associated with public safety issues.

Conclusion

Before the new STI team initiated a turnaround in the management of the SERAM project, major deficiencies had been noted in the project management. These included an incomplete analysis of needs, a glaring lack of rigour in risk management, marked dissatisfaction from the public safety services and an inefficient communication process.

Concurrently with the start of this remedial process, the new network that had just been deployed among the public safety services was experiencing major failures,

while major outages kept recurring. Furthermore, the observed recovery times underscored serious deficiencies in SERAM's back-up systems. The STI's findings indicated that SERAM's infrastructure did not have the robustness required for a public safety infrastructure.

These deficiencies in the SERAM project management, combined with the repeated network outages and downtime, meant that the initial efforts to finalize the project had to be rapidly redirected toward the launch of a remedial plan.

This resulted in significant delays in the initial timeline for project implementation, upward pressure on costs, and some needs that were neglected or put on hold.

The implementation of SERAM was initially scheduled for completion in December 2015. However, we understand that the implementation will not be complete until late 2017, subject to the remaining technical issues and challenges being resolved.

In terms of project costs, requests for changes resulting from poorly thought-out quotes or needs that were not well defined at the beginning, coupled with remedial actions taken or in the process of being taken, resulted in an increase of $46.8 million for capital expenditures and $4.5 million for operations. Thus, the updated financial framework of the project is now $129.2 million.

It should be noted that this revised financial framework does not take into account certain issues that must be addressed in meeting certain needs deemed essential by the public safety services, or the costs inherent to aligning the maintenance service term for user terminals, and their eventual replacement, with that of the infrastructure contract. These needs include real-time geolocation and possibly signal penetration into public buildings and Montréal's underground precincts, which will be considered in projects other than SERAM.

On the other hand, despite the potential issues and pitfalls that remain to be addressed, we are of the opinion that the measures taken or in the process of being taken by the STI to put the SERAM project back on course are relevant and functional, and they should reduce the number and impact of outages while promoting system stability.

With regard to the management of the project itself, the STI has taken measures to:

- listen more carefully to its clients and enable participation in decision-making that affects them;
- update and monitor the risk register;
- strengthen its relations with its suppliers;
- acquire new technical expertise;
- develop and negotiate palliative measures and a new Service Level Agreement;
- provide regular accountability to the authorities.

As for the technical aspects, various measures have been taken by the STI with its suppliers to reduce the frequency and duration of network outages and their impact on public safety services. These measures include infrastructure upgrades, the development of an operational back-up solution and the temporary provision of cellular communications equipment during the development period of this solution.

Despite the STI's efforts to meet the public safety requirements that were expected at the outset of the SERAM project, the resulting network will not, in our opinion, meet some significant functional and performance requirements, at least on a short- or medium-term basis.

Real-time geolocation and signal penetration in public buildings and Montréal’s underground precincts are still considered essential needs by the public safety services, yet they could not be met by the SERAM project and will need to be considered in other projects. In addition, a solution remains to be found to satisfy the particular needs of the Service de police de la Ville de Montréal’s specialized investigation activities, for which the expected deployment date has not yet been determined.

5.6. Transfo-RH Program Management

Background

The introduction of the Transfo-RH (Human Resources) program coincided with the municipal mergers. In fact, various projects, including Système intégré de gestion des ressources humaines et de la paie (SIG RH-Paie) and RH-Paie, have emerged since then to try to modernize human resource and payroll processes. However, they have not been successful.

In April 2014, the RH-Paie project was suspended in order to review its scope, implementation approach, choice of technological platform and budget. Then in 2015, the RH-Paie project underwent major reframing and was converted to the Transfo-RH program to respond to the reengineering of the Service des ressources humaines delivery model.

The Transfo-RH program has a minimum 2020 implementation horizon with an overall $83.2-million budget, $51.4 million for capital expenditures and $31.8 million for operating expenditures.

In October 2016, the city was unable to follow up on public call for tenders *Acquisition de services pour l'utilisation d'une solution logiciel-service ou infonuagique hébergée des ressources humaines et paie* for the Système intégré en RH (SIRH) project, the main project of the Transfo-RH program, because none of the bidders were compliant.

Purpose of the Preliminary Audit Study

The purpose of our preliminary audit study was to corroborate our questioning of key aspects of the Transfo-RH program so that action could be taken, if necessary, to rectify the situation and promote its success.

Conclusion

Various attempts were made to modernize human resources and payroll processes prior to the launch of the Transfo-RH program in October 2015. These attempts, made under the SIG RH-Paie and RH-Paie projects, were unsuccessful. We should bear in mind that this modernization project was to be completed in May 2007.

However, 10 years have gone by and the city is back to square one. The May 2016 public call for tenders for the SIRH project could not be completed. Because this project is the main component of the Transfo-RH program, the program is being completely replanned.

This replanning is likely to lead to significant delays in the initial Transfo-RH program implementation schedule and may also have an impact on program costs. According to the latest forecasts produced by the city, the estimated cost is $51.4 million for capital expenditures and $31.8 million for operating expenditures.

The causes of the above-mentioned SIG RH-Paie and RH-Paie project failures are symptomatic of poor governance. We found similar deficiencies in the Transfo-RH program's governance. In this regard and in order to facilitate the success of the program, the following steps should be taken:

- Clearly establish and approve the objectives and guiding principles underpinning the program's implementation;
- Implement a quality assurance process to ensure compliance with the requirements of the program, its projects and related deliverables;
- Implement a process that provides the proponent with periodic objective program status reports;
- Consider developing RACI[5] matrices to clarify the authority relationships between the various stakeholders and how roles and responsibilities are shared;
- Establish engagement mechanisms for strategic milestones to lock in milestone deadlines and content;
- Implement integrated risk management to assess various risks including information security risks.

In addition to the above-mentioned governance issues, it is important to substantiate the reasons for adopting a cloud computing solution and to reassure the authorities that this solution is an optimal choice for the city. Also, the content of the SIRH project's call for tenders needs to be reviewed to ensure it reflects market practices, and a new call for tenders must be launched as soon as possible.

In conclusion, we believe that the Transfo-RH program deserves special status beyond being one of the city's 75 or so priority projects. Based on the history of attempts to modernize human resource management and payroll processes, coupled with the risks involved in implementing the Transfo-RH program, the municipal administration needs to follow up rigorously to ensure that the implementation of this program will ultimately achieve the modernization objective.

5 Responsible, Accountable, Consulted, Informed.

5.7. Physical Penetration Tests

Background

The city and its controlled organizations have a great deal of essential and vital assets that are located, stored or held in various buildings and other premises.

Given the importance of these assets, they must be adequately protected in order to, first, maintain a sufficient level of protection to guarantee the safety of people and property, and, second, to ensure that essential services continue to be offered for the functioning and well-being of the Montréal community.

Physical security is the first means of defence that must be put in place in order to manage the risks associated to protecting the city's assets. This is because physical penetration is one of the first ways chosen by those of malicious intent to perpetrate acts aiming to steal, damage or destroy these assets or the information they contain.

In order to control or limit access to buildings that contain protected assets and to prevent fraudulent operations, efficient protection, surveillance and access control mechanisms must be put in place. To this effect, best security practices advocate running physical penetration tests under real conditions.

Purpose of the Audit

The purpose of our audit mission was to test physical security under real conditions in order to determine whether non-authorized physical access to the city's strategic buildings was possible.

Conclusion

For obvious security reasons, we cannot disclose in this annual report the results of our physical penetration tests. We should mention that, if necessary, the business units concerned have been informed of the deficiencies we have found and that they will be the object of upcoming action plans.

6. Follow-Up on Recommendations of Previous Years

The percentage of recommendations made by the BVG that have led to concrete measures is an essential indicator in ensuring that central departments and boroughs implement their recommendations.

Conclusion

For the value-for-money and information technology audit, the implementation rate for the recommendations in the first year of follow-up improved (50% for those of 2015 compared to 35% for those of 2014). As for the recommendations in their third year of follow-up in 2015, i.e., those from 2013, had an implementation rate of 74% (79% for those of 2014).

However, our follow-up work highlights the fact that several business units do not give adequate consideration to the recommendations addressed to them, which does not favour the implementation of the recommendations.

With regard to the audit of the financial statements, the implementation rate of the recommendations in the first year of follow-up deteriorated for those of 2015, with a result of 42%, compared to 67% last year. However, the 2013 recommendations in their third year of follow-up, i.e., 2015, show a result of 100% (67% for those of 2012).

We recommend that municipal administration establish performance indicators to measure the degree of implementation of the recommendations included in the Auditor General's audit reports and do the follow-up.

7. Overview of the Bureau du vérificateur général

This chapter presents the financial results of the BVG as well as the indicators on the number of audit reports issued and on human resources.

Significant human resources considerations have been discussed in section 2.


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