

**REPORT OF  
THE CITY GENERAL AUDITOR  
TO  
THE CONSEIL MUNICIPAL**

**For the year  
ended December 31, 2004  
and the quarter  
ended March 31, 2005**

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# TABLE OF CONTENTS

	Page
Introduction	1
Audit committee	3
Internal auditor	4
Follow-up on the recommendations of the general auditor	7
IT environment	8
Integrated management system (SIMON)	9
Strategic planning	10

## AUDIT RESULTS: VILLE DE MONTRÉAL

### FINANCIAL AUDITING

Ville de Montréal	3
Other municipal organizations	5

### VALUE FOR MONEY AND MANAGEMENT AUDITS

Municipal assessment management application (GEM)	3
Administrative managers available for placement (unassigned)	21
Contributions of the Ville de Montréal to the insurance plan for blue-collar employees of the former Ville de Montréal (Section 25 of the collective agreement)	35
Management of financial contributions paid to non-profit cultural and artistic organizations	43
Overtime management – Service de la sécurité incendie de Montréal	63
Awarding contracts for professional services	76
Road repair program (local system)	100
Computer security at the Ville de Montréal	150
Overview of general computer controls in the boroughs	181
Overview of data warehouses	196

## APPENDIX

Article 107 of the <i>Cities and Towns Act</i>	3
List of audit reports issued (statements or other financial information)	8
Employees of the General Auditor's Office	10

### **VALUE FOR MONEY AUDITS FLOW CHART**

- Planning	12
- Auditing and report	13
- Annual report and follow-ups	14

### **SCHEDULE OF EXPENSE ACCOUNTS OF THE OFFICE OF THE AUDITOR GENERAL**

External auditor's report
Schedule of Expense Accounts

## Introduction

According to the provisions of the *Cities and Towns Act* (the Act), the general auditor is bound to:

- provide, not later than March 31 of every year, a report to the Conseil municipal on the audit of the financial statements of the municipality and the statement fixing the aggregate taxation rate;
- transmit to the Conseil municipal, not later than August 31 of every year, a report presenting the results of the audit for the fiscal year ending on the previous December 31 and indicate any fact or irregularity the auditor considers expedient to mention.

On March 31, 2005, my audit report on the financial statements of the Ville de Montréal and the statement fixing the aggregate taxation rate was submitted, as required, to the City treasurer.

In this report, I declared that the financial statements were a fair and accurate representation of the financial situation of the Ville de Montréal as at December 31, 2004 and the result of its operations for the fiscal year ended as of that date, and that the aggregate taxation rate had been established in compliance with the regulations adopted under section 262 of the *Act respecting Municipal Taxation* (chapter F-2.1).

Considerable work goes into preparing this report. Last year, for example, it involved roughly half of the personnel at the general auditor's office. The undertaking represents a significant added value, albeit a little-known one, to the City, as it provides assurance to elected officials and managers that the financial reports forwarded to them are complete and trustworthy (i.e. fair, representative, relevant and timely).

The report I am submitting today covers the entire body of my work, namely the financial, management and value-for-money audits, for the period from April 1, 2004 to March 31, 2005.

In keeping with the approach I adopted last year, I have chosen to favour the search for and implementation of sustainable solutions to the underlying causes of the problems identified during the course of our work.

Using an approach based on partnership with elected officials and managers, we sought to:

- identify the significant risks or obstacles that may hinder the achievement of the desired results and/or objectives, as well as potential solutions to manage these risks and obstacles;

- evaluate the performance of key activities and programs within the Ville de Montréal in terms of effectiveness, efficiency and the economical use of resources;
- seek out and take advantage of opportunities to improve, and/or reduce the cost of, services provided to residents.

Accordingly, once again this year, our reports include the action plans proposed by the managers in order to remedy the problems encountered, along with their anticipated timetable.

## **Audit committee**

At the September 22, 2003 meeting of the Conseil municipal, a resolution was adopted to create an audit committee within the Ville de Montréal.

The city general auditor was named the secretary of the committee.

To date, the committee has met eight times.

The work done by the committee has involved the following, presented in order of importance:

- 2003 and 2004 financial statements of the Ville de Montréal;
- annual audit of the 2003 and 2004 financial statements of the Ville de Montréal by the city general auditor and external auditors;
- professional fees of external auditors for 2002, 2003 and 2004;
- reports from the Direction générale on risk management, internal control and legislative compliance;
- committee operating rules.

## **Internal auditor**

Further to the recommendation of the Directeur général, the Comité exécutif approved, at its October 20, 2004 meeting, the appointment of an internal auditor to the Direction générale.

The internal auditor is responsible for analyses, examinations, reviews, investigations and other similar procedures generally dealing with accounting, compliance, management, internal control, accountability, governance and value-for-money processes and activities.

The two main challenges facing the internal auditor will be to implement an internal audit approach based on best practices, including risk analysis, partnership with managers and collaboration with the General Auditor's Office and external auditors and to adapt an audit approach to facilitate the self-assessment of risks and controls by managers, continuous improvement with respect to management and the implementation of solutions to the issues at hand. The internal auditor will also provide an independent and objective opinion to the effect that the activities audited have been executed in compliance with the acts, by-laws, regulations and frameworks of the Ville de Montréal and according to generally accepted control and sound management standards and criteria.

The presence of three auditors (external, general and internal) may provoke a certain number of questions, even among close observers.



The following table aims to clarify, as much as possible, the roles and responsibilities of the three auditors:

<b>External Auditor</b>	<b>General Auditor</b>	<b>Internal Auditor</b>
Appointed under section 108 of the CTA	Appointed under section 107.1 of the CTA	
Appointed by the Conseil municipal	Appointed by a 2/3 majority of the Conseil municipal	Appointed by the Comité exécutif
Three-year term, renewable	Seven-year term, not renewable	Three-year term, renewable
Audit of City financial statements	Audit of City accounts (financial statements)	
Audit of accounts related to the general auditor		
	Audit of the statement fixing the aggregate taxation rate	
	Audit of municipal affairs, including compliance with laws, regulations, by-laws, policies and directives, and value-for-money audit (See following table on the scope of the work)	Audit of city processes and activities (accounting, compliance, management, internal control, accountability and value for money) (See following table on the scope of the work)
Audit report submitted to the Conseil municipal	Audit reports submitted to the Conseil municipal (public report)	Audit reports submitted to the Directeur général
	Audit of accounts (financial statements) and affairs of entities controlled by the Ville de Montréal	
	Audit reports to the boards of directors of the specified entities	
	Possible audit of accounts of any individual who has benefited from assistance from the Ville de Montréal or from an entity controlled by the city	
	With the permission of the Conseil municipal, audit of a pension plan or fund of a retirement committee of the Ville de Montréal or an entity controlled by the Ville de Montréal.	

<b>Scope of the audit work (affairs, processes or activities)</b>	
<b>General Auditor</b>	<b>Internal Auditor</b>
<p>Provide to the Conseil municipal evaluations of the management of municipal affairs with a view to increasing quality and performance, in particular as regards:</p> <ul style="list-style-type: none"> <li>• compliance with laws, regulations and by-laws;</li> <li>• management of resources in terms of: <ul style="list-style-type: none"> <li>- effectiveness (doing the right things);</li> <li>- efficiency (doing things right);</li> <li>- economy (doing things at the lowest cost).</li> </ul> </li> <li>• accountability of management and administration to the Conseil municipal.</li> </ul>	<p>Provide an independent evaluation of the effectiveness of internal controls to the Direction générale.</p> <p>This effectiveness depends on the nature and adequacy of control activities, as well as on ethical values and compliance mechanisms.</p> <p>The identification and evaluation of risks and control activities are at the core of the internal audit function.</p>
<p>Scope:</p> <p>The whole of the City and its boroughs.</p>	<p>Scope:</p> <p>All activities that fall under the authority of the Conseil municipal or Comité exécutif, or any strategic issue (under section 57 of the Charter of the City of Montréal).</p>

Until now, for certain files, I have played the role of internal auditor. As such, I carried out citywide risk analyses, which I then shared with senior management of the Ville de Montréal. I was and still am a member of the steering committee for the SIMON project. These are, of course, only a few examples.

I intend to gradually distance myself from this kind of involvement to enable the internal auditor to take over. I plan to use the time gained as a result to evaluate municipal services and programs for the benefit of the Conseil municipal and the Ville de Montréal population as a whole.

## **Follow-up on the recommendations of the general auditor**

If there is one main indicator that is key to determining whether my partnership approach is effective, it is the percentage of recommendations from the general auditor that lead to concrete corrective measures.

The existence of a formal follow-up process for the recommendations included in the general auditor's annual report speaks to the importance the City places on these recommendations.

With respect to the General Auditor's 2003 report (including the first quarter of 2004), the annual follow-up report, presented by the Direction générale to the Comité exécutif, shows that of the 46 follow-up files, 27 are completed and 19 are underway. The files completed or underway represent 100% of the cases, as compared to the established objective of 80%.

In addition, the general auditor in his report last year expressed certain major concerns that did not stem directly from the management and value-for-money audits. These concerns dealt with the following issues:

- IT environment;
- the integrated management system (SIMON).

## IT environment

Last year, I recommended to the municipal administration to begin work on completing, as soon as possible and by the end of 2004 at the latest, a strategic IT plan, including an inventory of IT needs and available resources, an analysis of the performance of IT systems and their ability to fulfil the needs of the boroughs and corporate departments, and a risk analysis focussing on information (availability, comprehensiveness, integrity, data reliability), protection (confidentiality, comprehensiveness, integrity), backup/disaster recovery and operational continuity.

I added that the “strategic plan should identify and prioritize the main opportunities to cut costs and improve services provided to residents that the increased use of information technology would represent for the Ville de Montréal. This could include, for example, the possibilities of rationalizing computer equipment, operating systems and communications protocols, improving co-operation among the various IT groups in terms of both workload and sharing available expertise, and undertaking various initiatives to enhance the efficiency and effectiveness of the City’s overall operations through the re-engineering of processes.”

I have since learned that the preparation of a plan of this nature has been outsourced to a consulting firm. The work has only recently begun.

In addition to the concerns I voiced last year, there is the issue of computer security at the Ville de Montréal. A summary of this report, as well as the audit reports on general computer controls in a number of boroughs, two data warehouses and the GEM municipal assessment management application, all of which appear later in this report, point to serious problems in this regard.

Over the years, the Ville de Montréal and its predecessors have invested heavily in computer, office technology and network systems. Together, these systems form a network and constitute an essential infrastructure for the smooth operation of the municipal administration. In my opinion, this infrastructure must be managed as a whole, as it is impossible to adopt adequate protective measures to safeguard information if all the stakeholders do not agree to implement and enforce similar and co-ordinated policies, standards, procedures and practices.

## **Integrated management system (SIMON)**

In my 2003 annual report, I was happy to report that the integrated management system (SIMON) was being implemented and invited “the municipal administration to take the necessary measures to increase the visibility of the integrated management system implementation project and thus ensure that it is recognized by all parties concerned as a priority for the Ville de Montréal in 2004, as well as facilitate its linking to the new organizational model’s orientations and operational imperatives.”

The SIMON project is currently under way. Unfortunately, although a part of the initiative was launched in January 2005, there has been a significant delay in the planned delivery of the Finance/Procurement module.

Admittedly, the management of such an extensive project has its fair share of risks. Despite the efforts and dedication of the SIMON team and the support of their colleagues in the Service des finances and the Service de l’approvisionnement, many difficulties have been encountered, making it impossible to deliver the complete module by the stipulated deadline.

Pairing problems between the implicit operating mode of the integrated management system and the new organizational model of the Ville de Montréal constitute one of the major causes of these difficulties.

A shortage of resources within the Ville de Montréal who have experience in implementing systems of this nature and the lack of an integration expert, with a clear mandate, have also led to a number of problems.

Without clear guidelines, the SIMON, Finances and Approvisionnement teams lost too much time debating their respective roles within the project. In addition, the effect of the new integrated management system on the operations of the two departments in question, as well as their relationship with other municipal departments and, especially, the boroughs, was underestimated.

The new deadline for the delivery of the complete Finance/Procurement module is January 2006.

Ongoing vigilance is required to keep these kinds of problems at bay as the teams work toward delivering the system. The same applies to Phase II of the Finance/Procurement module (former suburban municipalities) and the Human Resources/Payroll module.

## Strategic planning

At the present time, the Ville de Montréal does not have a documented strategic plan in place.

The purpose of a strategic plan is to enable elected officials and municipal managers to:

- draw up an exhaustive inventory of the opportunities and threats facing the administration;
- objectively evaluate the strengths and weaknesses of the municipal organization;
- precisely determine the needs to be satisfied;
- establish the real capacity of the city to satisfy these needs;
- identify and prioritize the actions to undertake and the resources required to do so;
- proceed with the corresponding arbitration; and finally;
- ensure consistency throughout.

The advantage of such an approach is that it takes all the key issues for the Ville de Montréal into account, whether they are political in nature or simply stem from the necessity to protect infrastructure. This approach also makes it possible to foster the alignment of the intents of all the interested parties. Accordingly, once the debate has concluded and the decision been made, it can be expected that the convergence of the efforts of all stakeholders will become the norm for everyone and that the support of colleagues in the fulfilment of the priority objectives of the Ville de Montréal will be a given.

In order to enable residents to fully appreciate the choices available to them during the next elections, it is important that senior municipal managers document all the vital issues at hand and identify possible courses of action, including their corresponding costs and benefits.

It is more than clear that the choice of actions to take ultimately belongs to elected officials. The strategic plan therefore becomes an invaluable tool that should help shed light on the motivating factors behind each of the chosen actions.

The City already has in its possession some of the elements that would facilitate the preparation of such a plan.

An important strategic effort was made by the current Administration in 2002 with the organization of the Sommet de Montréal. The aim of this initiative was to “mobilize all residents and groups devoted to the success of the new city so that they can pool their expectations, prioritize their efforts and projects and define a realistic action plan.”

The results of the Sommet de Montréal and the provisions of the “Contrat de ville” concluded with the Government of Québec had a major impact on the composition of the 2003 budget. In addition, the concise presentation of the business plans, both for the Ville de Montréal and for each department and borough, accompanied by performance indicators”, established in order to improve the delivery of services to residents,” boded well in terms of transparency and accountability.

Other elements essential to the development of a strategic plan were outlined in the 2004 budget. The mission, vision, values and basic principles for the organization of resident services and the criteria for designing an organizational model were but some of the areas focussed on in the budget document.

The main components of earlier business plans were reincorporated into the 2005 budget.

Admittedly, since the merger of the 27 municipalities on the Island of Montréal and the Communauté urbaine de Montréal on January 1, 2002, the new city has undertaken a certain number of actions that are strategic in scope, including:

- the refinancing of the actuarial deficit of the Commissions de retraite of the former Ville de Montréal;
- the definition of the new organizational model;
- the implementation of an integrated management system (Procurement, Finance, Human Resources, Payroll);
- the water management plan;
- the development or adoption of a number of policy papers, such as those on housing plans, urban planning and sustainable development, as well as policies on economic and cultural development, and the protection of natural settings and heritage.

The 2005 budget document also identified certain other vital issues for which the Ville de Montréal has yet to establish a game plan, namely:

- the rehabilitation of the arterial road system;
- the upgrading of municipal libraries;
- heritage protection;
- sustainable development.

I strongly suggest that the Direction générale complete and ensure the widespread dissemination of this first strategic plan before the next election campaign gets under way. This would enable all the candidates to have the opportunity to familiarize themselves with the major issues that the Ville de Montréal will have to face in the coming years and to form an opinion on what measures should be taken to deal with them.



**AUDIT RESULTS: VILLE DE MONTRÉAL**  
**FINANCIAL AUDITING**

VILLE DE MONTRÉAL	3
OTHER MUNICIPAL ORGANIZATIONS	5



## VILLE DE MONTRÉAL

As required by law, on March 31, 2005, I delivered to the treasurer of the Ville de Montréal, for submission to the Conseil municipal, a report on my audit of the financial statements of the Ville de Montréal for the fiscal year ended December 31, 2004. In this report, I stated that I believed that “these financial statements present fairly, in all material respects, the financial position of the City as at December 31, 2004 and the results of its operations and the changes in its financial position for the year then ended, in accordance with the accounting principles described in Note 2 to the financial statements.”

It is nevertheless important to emphasize that the accounting principles generally accepted in municipal accounting in Québec, on which the underlying principles set out in Note 2 are based, differ from those accounting principles generally accepted in the public sector, mainly in regard to:

- the consolidation of organizations included in the reporting entity;
- the recognition of the expenditure related to pension plans.

In 2003 the Comité sur les administrations municipales of the Ordre des comptables agréés du Québec recently examined the impact on the auditor report's caused by this situation.

“We are aware that some differences remain between the public sector recommendations and the ministère des Affaires municipales, du Sport et du Loisir (MAMSL) accounting standards. However, in the last few years, major amendments have been made to municipal accounting in Quebec and the standards are now closer to the public sector accounting recommendations. In addition, through its municipal finance advisory committee, on which two Ordre members sit, the MAMSL has established a subcommittee representing the major municipal manager associations and the main accounting orders. The subcommittee's mandate is to review current accounting practices in Quebec's municipal environment and to adapt them to the recommendations of the Public Sector Accounting Board (PSAB).

In our opinion, given the accounting principles currently applied by Quebec municipalities and the efforts made to comply with the PSAB recommendations, the financial statements of Quebec municipalities are not misleading and members should therefore use the audit report model provided in the Programme de verification municipale.”

Eventually, we can expect major changes to the presentation of the Ville de Montréal's financial statements.

### **Aggregate taxation rate**

I also submitted to the Conseil municipal a report on my audit of the aggregate taxation rate for the Ville de Montréal for the year ended December 31, 2004. This rate is used as a basis for the establishment of a number of amounts paid to the Ville de Montréal by the Gouvernement du Québec. In my opinion, this rate has been established, in all material respects, in compliance with the regulations adopted pursuant to section 262 of the *Act respecting Municipal Taxation*.

## OTHER MUNICIPAL ORGANIZATIONS

I also audited the financial statements for the year ended December 31, 2004 for a number of organizations under the control of the Ville, including the Société de transport de Montréal, the Société de développement de Montréal and the Société d'habitation et de développement de Montréal.

In addition, I audited the pension funds for the former Ville de Montréal, the former Communauté urbaine de Montréal and the former Ville de Montréal-Est.

A list of all audited organizations can be found in the appendices.



## VALUE FOR MONEY AND MANAGEMENT AUDITS

<i>MUNICIPAL ASSESSMENT MANAGEMENT APPLICATION (GEM)</i>	3
<i>ADMINISTRATIVE MANAGERS AVAILABLE FOR PLACEMENT (UNASSIGNED)</i>	21
<i>CONTRIBUTIONS OF THE VILLE DE MONTRÉAL TO THE INSURANCE PLAN FOR BLUE-COLLAR EMPLOYEES OF THE FORMER VILLE DE MONTRÉAL (SECTION 25 OF THE COLLECTIVE AGREEMENT)</i>	35
<i>MANAGEMENT OF FINANCIAL CONTRIBUTIONS PAID TO NON-PROFIT CULTURAL AND ARTISTIC ORGANIZATIONS</i>	43
<i>OVERTIME MANAGEMENT – SERVICE DE LA SÉCURITÉ INCENDIE DE MONTRÉAL</i>	63
<i>AWARDING CONTRACTS FOR PROFESSIONAL SERVICES</i>	76
<i>ROAD REPAIR PROGRAM (LOCAL SYSTEM)</i>	100
<i>COMPUTER SECURITY AT THE VILLE DE MONTRÉAL</i>	150
<i>OVERVIEW OF GENERAL COMPUTER CONTROLS IN THE BOROUGHES</i>	181
<i>OVERVIEW OF DATA WAREHOUSES</i>	196





# ***MUNICIPAL ASSESSMENT MANAGEMENT APPLICATION (GEM)***

## **BACKGROUND**

The Direction de l'évaluation foncière, which is under the jurisdiction of the Service des affaires corporatives, has a mission to prepare and update the real estate and lease assessment roles. The assessment roles are used to prepare all tax account bills for City taxpayers. Such bills amounted to more than \$2 billion in 2003. The assessment roles are prepared and tabled every three years. The roles are maintained and updated using information obtained through issuing construction or modification permits.

The Direction de l'évaluation foncière undertook a program to modernize its computer infrastructure and planned to implement the new equipment in the fall of 2004.

Essentially, the new technological architecture for the assessment system relies on two servers: one each for the database and for the application. The data is accessed by means of an Internet browser. Identical servers are used to manage the development and production environments. The Direction de l'évaluation foncière servers are connected to the City's network by means of the metropolitan area network. The equipment is housed on City premises.

The new application, called GEM (for Gestion de l'évaluation municipale – Municipal Assessment Management) was developed in keeping with the needs of the Direction de l'évaluation foncière. It can be used to maintain and update the City's various assessment roles and issue modification certificates for assessment units. It includes modules that can be used to distribute the work among various stakeholders and control the processing of events that serve to update the assessment roles.

## **METHODOLOGY AND SCOPE**

The purpose of our audit was to examine the general IT controls in place and check that they ensure the accuracy, integrity and availability of data.

The City's standards and policies, as well as industry best practices, served as assessment criteria.

Our audit was conducted from May to July 2004 and covered the following:

- logical security of the database server and the application server;
- logical security of the database;
- logical security of the GEM application;
- interfaces;
- backup strategy;
- contingency and disaster recovery plans;
- antivirus protection;
- licenses;
- migration to the new platform.

With respect to the migration, we only examined the data conversion and migration methodology. We did not validate the final migration of data from the old system to the new one.

We excluded the following elements from our audit:

- physical security and the computer environment;
- the application's functionalities;
- the server and database development environment;
- the Service d'évaluation and the Service des finances office technology;
- the environment of the graphic register's server.

With respect to the logical security of the application, we were not able to examine the work units or the access profiles assigned to each of the users, since the creation of user codes had only been partially completed at the time of our audit.

## OBSERVATIONS AND RECOMMENDATIONS

The results of our audit indicate the presence of adequate controls in the following fields:

- Logical security of the application server  
The manufacturer's latest patches were installed. Moreover, the "guest" user account created by default when the operating system was installed was deactivated. Unsuccessful and successful attempts to connect to this server are also logged.
- Antivirus protection  
Computer virus detection software was installed on the application server. This software and its virus definitions are updated automatically.
- Copyright  
The number of licenses installed on the equipment is properly controlled. Software licenses were obtained prior to installation.
- Remote access  
We were informed that no modem is connected to the servers.
- Continuity of operations  
Operating continuity is ensured by a manufacturer's guarantee to respond within four hours in the event that the servers fail. Moreover, the servers are equipped with mirror disks to ensure adequate availability.
- Project management  
The GEM application is being developed in keeping with a timetable outlining the principal steps. At the time of our audit, this timetable was respected.
- Data migration  
Various conversion tests, as well as tests to validate the transferred data, were conducted with the user department.

Nevertheless, our audit also brought to light situations that require an action plan. This report organizes our observations by field:

- general IT controls;
- database server security;
- database;
- GEM application;
- interfaces.

## **General IT controls**

### Creation of user codes

In order to enable users to connect to the City's various informational assets in a secure manner, access codes must be created for each individual who is authorized to access such information. The former Ville de Montréal had adopted a unique user code standard. This formulation was retained as the standardized code for the new City and is indicated in the human resources databases. However, a different standard was in effect within the former Communauté urbaine de Montréal (MUC), including the Direction de l'évaluation foncière.

Since the new City was created, no directives concerning a new standardization of user codes have been issued or updated for any department. Thus, during the course of our audit, we noted that the standard for the former MUC was used to create user codes for the GEM servers and application. In our opinion, it would have been appropriate to standardize these user codes for all of the City's informational assets in order to reduce the complexity of the work done by the user support centre and facilitate future interfaces with other IT applications (for example, SIMON).

## **Recommendations**

**We recommend that the Service des services administratifs issue and distribute a directive concerning the standardization of user codes for all of the City's current and future informational assets.**

**We also recommend that the Direction de l'évaluation foncière comply with that directive once it has been adopted.**

### **Actions proposed by the services**

*“A directive concerning the standardization of user codes will be issued by the EPS (Équipe de planification stratégique) within the next six months. Following this, the Division des technologies will comply with the directive.” (Planned completion: September 2005)*

*“. . . The Direction de l'évaluation foncière for the Ville de Montréal will comply with the directive within the six months after its adoption.” (Planned completion: December 2005)*

### Access management

There is no standardized form or procedure for creating or modifying user codes and access profiles for either the various servers or the GEM application. Those responsible for server or application operations create, delete and modify user access codes after receiving an e-mail or telephone call to that effect. Moreover, user codes for the new servers were created from the information available to the person responsible for configuring the server. Also, a high level of staff turnover necessitates constant changes to Direction de l'évaluation foncière employees' access to the GEM application.

There is a risk that unauthorized access will be granted or maintained in the event of extended absences, transfers or departures.

We are of the opinion that access should be managed by a computer application such as DASI (Demande d'accès aux Systèmes informatisés – Request for Access to Computerized Systems) or any similar application developed by the City.

### **Recommendation**

**We recommend that the Service des services administratifs and the Direction de l'évaluation foncière use a computer application such as DASI to manage requests for access to informational assets.**

### **Actions proposed by the Service des services administratifs**

*“[Effective immediately], all requests will be submitted by e-mail and archived.” (Completed)*

## Password parameters

Security starts with elementary precautionary measures to limit any theft of a known user of the system's identity.

In keeping with best practices, a directive concerning passwords is required. Among other things, it must specify their length and the period for which they remain in effect. According to studies on security issues, a password must contain at least six alphanumeric characters and be changed at least every 90 days, if not every 30 days. Such a directive, entitled the "Norme fixant les exigences de la sécurité physique et logique des serveurs" does exist, but our audit indicated that it is not respected in terms of both the operating systems and the application. The default parameters have been maintained on the operating systems (that is, all values are null) and the application does not set an expiry date for passwords. This could lead to:

- unauthorized access;
- a failure to respect the confidentiality of information;
- a decrease in the logical security of the computer environment;
- the modification or destruction of data.

## **Recommendations**

**We recommend that the Service des services administratifs and the Direction de l'évaluation foncière:**

- **activate the servers' environmental parameters, especially those concerning the length of passwords and their expiry dates, their retention history and the number of unsuccessful access attempts tolerated, so that the "Norme fixant les exigences de la sécurité physique et logique des serveurs" is respected (for example, six characters, 30 days);**
- **implement a mechanism for changing passwords and set an expiry date for them in respect to the application.**

## ***Actions proposed by the Service des services administratifs***

*"The recommendation is accepted." (Planned completion: end of April 2005)*

## Contingency plan

We were informed that there is no contingency plan providing for the transfer of operations to an alternate site in the event that computer resources are damaged or destroyed following a breakdown. This goes against best practices as well as the “Norme fixant les exigences de la sécurité physique et logique des serveurs.” In the absence of a contingency plan, continuity of operations could be compromised.

## **Recommendation**

**We recommend that the Service des services administratifs, in co-operation with the Direction de l'évaluation foncière, comply with best practices in respect to the development of a disaster recovery plan that would include:**

- **possible scenarios;**
- **an escalation procedures for emergency calls;**
- **procedures for the complete recovery of the servers;**
- **procedures for operating the servers;**
- **procedures for recovering applications;**
- **the principal responsibilities of each individual involved;**
- **the essential hardware components and software;**
- **the recovery times required.**

## ***Actions proposed by the Service des services administratifs***

*“At present, we have the required mechanisms and procedures in place to recover the operating system, applications, database and data from the server.*

*A specialist in this field will be assigned to evaluate a disaster recovery plan. We will take action in accordance with the recommendations of that evaluation.” (Planned completion: first half of 2005)*

## **Database server security**

### Environmental parameters

In order to ensure secure access and thus deter unauthorized people from connecting to the various computer resources, operating systems are generally equipped with certain environmental parameters that the administrator can modify. These parameters serve to specify certain restrictions, particularly in respect to the number of unsuccessful connection attempts or the duration of an inactive connection allowed. These parameters also serve to determine the message that will be displayed for the user during a successful connection.

We observed that the control parameter concerning the number of unsuccessful connection attempts, which is deactivated by default, was not changed during the initial configuration. Thus, an unauthorized individual can make any number of attempts to connect to the server and, therefore, appropriate the rights and privileges of an authorized user.

Moreover, we also noted that, during the access procedure, no user-warning message is displayed indicating that access is provided solely for business purposes and that any illegal action could be liable to recourse. The message displayed when a connection is successful indicates the name of the server as well as the name and version of the operating system. In its current form, the message makes it easy for unauthorized individuals to identify the operating system's specifications and thus more quickly exploit this system's flaws to perform operations that could damage the informational assets.

### **Recommendations**

**We recommend that the Service des services administratifs:**

- **activate the environmental parameters concerning the number of unsuccessful connection attempts;**
- **modify the server welcome message so that it indicates that access is granted solely for business purposes and that any illegal action is liable to recourse.**

***Actions proposed by the Service des services administratifs***

*"Agree with the recommendation." (Planned completion: first half of 2005)*



*“In accordance with the recommendation, the server welcome message will be reviewed and corrected.”*  
**(Planned completion: April 2005)**

#### Upgrading the operating system

One of the best ways in which to protect against the security loopholes that are exploited by several harmful programs, such as viruses, is to keep the operating system up to date. When we visited the operating system publisher’s site, we noticed that several patches issued in March and June 2004, including several that concerned security, were not included in the version of the operating system currently installed on the server.

The fact that the patches produced by the publisher, particularly those concerning security, are not installed on a regular basis exposes the server to security loopholes.

#### **Recommendation**

**We recommend that the Service des services administratifs make sure that patches, particularly those concerning security, are tested, applied on a regular basis and do not conflict with the database housed there.**

#### ***Actions proposed by the Service des services administratifs***

*“The Service des services administratifs agrees with the recommendations. It is expected that additional costs will be incurred in order to acquire available test server time and the necessary professional resources (for overtime charges, external resources, etc.). The Service d’évaluation will allow testing on the development environment on a temporary basis. Unless an emergency occurs, these tests will be performed every three months. The tests will take place on Friday evening. In the event that the tests are positive, patches will be applied to the production environment.”* **(Planned completion: first half of 2005)**

#### Documentation

According to the “Norme fixant les exigences de la sécurité physique et logique des serveurs,” servers must be documented so as to ensure that they are available. For instance, this documentation must include:

- descriptions of their physical components and their configuration features;
- descriptions of their software components and their configuration features;

- all the procedures or instructions required to reboot the server.

We were informed that such documentation does not exist or is only partially available.

Without this documentation, the availability of the servers is directly dependent on the human resources usually assigned to operate them.

### **Recommendation**

**We recommend that the Service des services administratifs comply with the “Norme fixant les exigences de la sécurité physique et logique des serveurs” in respect to server documentation.**

### ***Actions proposed by the Service des services administratifs***

*“This recommendation is accepted.” (Planned completion: first half of 2005)*

### **Database**

#### Backup copy strategy and recovery plan

When an equipment or data problem occurs, it is sometimes necessary to use backup copies to recover lost programs and information. Backup copies must be made in keeping with a strategy that determines when this should be done and a plan that sets out all of the steps required to recover files and databases according to various scenarios.

During our audit, we noted that no time had been determined for making backup copies and that there was no plan stipulating the different steps for restoring information under various possible situations.

The lack of a strategy for making backup copies and of a recovery plan jeopardizes any restoration of data from backup copies, and risks a permanent loss of data following the incorrect installation of security files.

## Recommendation

We recommend that the Service des services administratifs, in co-operation with the Direction de l'évaluation foncière, prescribe a strategy for making backup copies and a recovery plan outlining the various steps required to restore data.

### *Actions proposed by the Service des services administratifs*

*"A strategy for making backup copies and a recovery plan outlining the various steps required to restore data have been implemented." (Completed)*

## Logs

During our audit, we noted that no log files had been activated, particularly in respect to the rights granted to access the database using the "Grant" command, as well as access by users with high-level access privileges.

As a result of this situation, the granting of access and any unusual actions cannot be identified quickly.

## Recommendations

We recommend that the Service des services administratifs:

- activate the log files for the rights granted to access the database and the access by users with high-level access rights;
- develop rules concerning the period of retention for log files and the frequency with which they must be examined.

### *Actions proposed by the Service des services administratifs*

*"The mechanisms required will be implemented and the necessary framework will be strengthened." (Planned completion: first half of 2005)*

## Environmental parameters

In order to secure access to the database, the manufacturer provided certain parameters that must be configured. These include the number of unsuccessful connection attempts, the time for which a connection may remain inactive, and the frequency with which passwords are to be changed. By default, none of these parameters was activated when the database was set up.

Our audit revealed that none of the environmental parameters had been configured within the database. Therefore, there is a risk that passwords may be discovered as a result of repeated attempts to connect involving high-level user codes.

### **Recommendation**

**We recommend that the Service des services administratifs activate the various environmental parameters for the Direction de l'évaluation foncière database, particularly those concerning unsuccessful connection attempts and the frequency with which passwords must be changed.**

### ***Actions proposed by the Service des services administratifs***

*"The required mechanisms will be implemented and the necessary framework will be strengthened."  
(Planned completion: end of 2005)*

### "rptuser" application code

The "rptuser" application code was created to generate reports in the GEM application and to transfer them to the Service des finances system, among others. This user code has the access rights to modify the database. When it was created, a password was assigned to this code. We were informed that several individuals know the password for this code and that no one has been put in charge of managing this password. This code could therefore be used by an unauthorized individual.

## **Recommendation**

**We recommend that the Service des services administratifs:**

- **change the password for the “rptuser” application code used to produce reports and designate someone as being responsible for monitoring the use of this password;**
- **assign access rights for modifications when temporary tables are created and read-only access rights for tables being prepared.**

### ***Actions proposed by the Service des services administratifs***

*“The access rights have been changed. The password modification procedure will be examined.”  
(Planned completion: end of 2005)*

## **GEM application**

### Development of the application

The implementation of a new application generally provides the opportunity to analyse the procedures in place and optimize them. We were informed that, in fact, a review of procedures with the managers was performed. Nevertheless, despite certain opportunities, there have been no real changes with respect to operations. For example, the person who does the assessment work does not enter the data in the application. This is done by a clerk instead.

The fact that the application was not developed in accordance with its new tools and functionalities means that its possibilities are not used to their full potential, resources are not rationalized and, ultimately, that savings are not generated and resources are not freed up for other work.

## **Recommendation**

**We recommend that the Direction de l'évaluation foncière establish a list of the procedures for which the application could be modified so as to save resources and make the corrections during a future development stage of the application.**

### **Actions proposed by the Direction de l'évaluation foncière**

*“The GEM application, which was recently put into production, was intended to modernize the database and the computer tools that serve to fulfil the mission of the Direction de l'évaluation foncière of the Ville de Montréal. It is clear that this new application provided an opportunity to review and improve the area's work procedures.*

*Therefore, the exercise that involved analysing work procedures and ensuring their reflection in the application for the benefit of the computer system was completed in recent months. Decisions concerning the procedures to be adopted when implementing this new application were duly considered and made. We are aware that certain of the application's functionalities are currently underused.*

*The strategy of the Direction de l'évaluation foncière of the Ville de Montréal involves **gradually** helping the organization abandon certain practices or manual operations so as to fully exploit the system's potential. This strategy will serve to fulfil the mission of the Direction de l'évaluation foncière of the Ville de Montréal while respecting the organization's ability to adapt and evolve.”*

#### Changing password

When a new user code is created, the application assigns a password that is the same as the user code. Nevertheless, when an individual connects for the first time, he or she is required to change that original password. We noted that there is no mechanism requiring a user to change his or her password on a periodic basis.

#### **Recommendation**

**We recommend that the Direction de l'évaluation foncière comply with the “Directives d'encadrement de la gestion des accès aux ressources informatiques” in respect to the confidentiality and expiry of passwords by implementing a mechanism requiring users to periodically change their passwords.**

### ***Actions proposed by the Direction de l'évaluation foncière***

*“The Division planification stratégique et optimisation de la fonction will issue a directive concerning the standardization of the user code . . . . The Direction de l'évaluation foncière will comply with the directive within the month following its adoption.” (Planned completion: end of 2005)*

#### Limitation concerning access attempts

In order to deter unauthorized users, a good security practice is to lock a user access code after a maximum number of unsuccessful attempts to access an informational asset.

We noted that the application contains no mechanism to lock the account after a certain number of unsuccessful attempts. Therefore, an unauthorized user could more easily try to usurp the identity of another user.

#### **Recommendation**

**We recommend that the Direction de l'évaluation foncière introduce a mechanism to lock the account after a certain number of unsuccessful attempts.**

### ***Actions proposed by the Direction de l'évaluation foncière***

*“The Division planification stratégique et optimisation de la fonction will issue a directive concerning the standardization of the user code . . . . The Direction de l'évaluation foncière will comply with the directive within the month following its adoption.” (Planned completion: end of 2005)*

#### User management

In order to manage security from within the new GEM application, its developers included a menu called “Control/Security.” This menu serves specifically to manage profiles and access by profile, as well as users. The “User management” function serves to create user codes and assign them to a work unit, as well as create the necessary access rights and associate them to a user code through the use of profiles.

At the time of our audit, two groups of users had access to this function, namely users with a “Pilot” profile, which includes two people, and users with a “PSU” profile, which includes four individuals. Therefore, six users are able to create, define and assign all access profiles to other users, including the application’s security functionalities. Too many people enjoy this privilege, which weakens the security of the application.

## **Recommendation**

**We recommend that the Direction de l'évaluation foncière change the rights granted to the “PSU” profile so that individuals with that profile will not have the opportunity to define profiles within the GEM application or assign the “Pilot” profile.**

### ***Actions proposed by the Direction de l'évaluation foncière***

*“Recommendation **completed.**”*

## **Interfaces**

The business processes of the Direction de l'évaluation foncière include interactions between the various components of the assessment role preparation cycle, among them:

- the systems for issuing construction and modification permits, whose information can be used to modify the assessment roles;
- the graphic register, which represents the location and area of all properties within the City and is used to manage cadastral operations;
- the deeds for real estate properties, which are used to change the owners indicated in the assessment role.

Information concerning permits comes from the boroughs, whereas that concerning cadastral operations comes from the ministère des Ressources naturelles. The Officier de la publicité foncière provides information concerning deeds issued within the territory of the Ville de Montréal.

Certain computer interfaces are usually developed between the various applications or components of a system in order to accelerate processing and increase control over data (integrity and accuracy).



Our audit revealed that there is currently no interface of this type for the applications related to permits, or between the graphic register and the new GEM application.

We were told that the tool that manages the graphic register generates certain types of data that are useful for managing the roles, in particular the registration number and the data concerning the area of the assessment unit (length, depth, frontage). This data is also used in the GEM application. Even if there is a system for exchanging files between the ministère des Ressources naturelles and the Service d'évaluation foncière in order to keep the graphic register up to date, some data common to both must be re-entered in the GEM manually. This situation increases the risk of omissions or input errors, in addition to requiring additional resources.

As for the information concerning property deeds, we were informed that discussions are under way with the Officier de la publicité foncière in respect to automating the processing of such data.

## **Recommendations**

**We recommend that the Direction de l'évaluation foncière develop interfaces between the various components of the application, particularly between the graphic register and the GEM application.**

### ***Actions proposed by the Direction de l'évaluation foncière***

*“For a long time, the Direction de l'évaluation foncière has sought to develop interfaces to upload information from outside sources directly into GEM.*

*This operation has already been **completed** for real estate transfers from the Bureau de la publicité des droits and for lease memos from the Service des finances.*

*We are actively seeking to extend this type of procedure to include permits, which the boroughs are responsible for issuing and, in the near future, to the newly reconstituted municipalities.*

*This matter is complicated by the fact that various bodies issue permits in a variety of formats. We are trying to establish contacts with the entities concerned in order to obtain their approval for using a standardized form that could be transmitted to us electronically.*

*However, we have no control over these entities and we therefore cannot guarantee the results within a foreseeable period of time. The only system that we will be able to use in the near future is the new permit system for the former Ville de Montréal, which the boroughs use solely on a volunteer basis.*

*As for preparing and updating the graphic register, a contract has been awarded for a study on optimizing its procedures and integrating them into the existing systems. The fulfilment of this contract is expected to take 50 days. Work on it began on **January 15, 2005**.*

*The recommendations that will be submitted within that study will be analysed and appropriate measures will then be taken to improve the management of the graphic elements of the property assessment system.”*

## ***ADMINISTRATIVE MANAGERS AVAILABLE FOR PLACEMENT (UNASSIGNED)***

### **BACKGROUND**

An employee who is available for placement is defined as a permanent employee whose permanent position has been eliminated and who no longer holds a specific position. Since permanent employees have job security, they cannot be laid off as a result of any structural reorganization, technological changes or changes to work procedures. Therefore, the Ville de Montréal (the City) is duty bound to reassign these individuals as soon as possible in order to optimize the use of its human resources and, accordingly reduce the costs associated with these layoffs.

These employees who are available for placement are presently grouped into two categories: those on temporary assignment, and those who have no assignment. An unassigned employee who is available for a placement is not assigned to any authorized position in the administrative structure of a borough or corporate department. Priority must therefore be given to these unassigned people who are available for placement.

In this regard, the Centre de soutien à la transition de carrière (CSTC) of the Direction du développement du capital humain of the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle produces a monthly report that lists the names of the employees who are available for placement. This report concerns white-collar workers, general professionals, foremen, administrative managers and senior executives. These employees total approximately 13,500, of whom 10% are administrative managers.

Of this number, the September 2004 report listed 413 city employees who were available for placement, including 169 who were unassigned.

With respect to administrative managers alone, 111 were available for placement, including 56 who were unassigned. These managers are to be found mainly in the corporate departments that have 50 administrative managers who are unassigned and available for placement, as compared with six for the boroughs.

Finally, whereas administrative managers represent approximately 10% of all employees mentioned in this report, they represent 33% of the unassigned employees available for placement. The salaries and

ancillary benefits of these unassigned managers available for placement represent approximately \$6.3 million per year. Consequently, sufficient efforts must be deployed with a view to quickly reassigning as many of these administrative managers as possible.

## **METHODOLOGY AND SCOPE**

The audit consisted in evaluating to what measure means have been taken to keep the number of unassigned individuals available for placement at the lowest possible level. More particularly, we addressed the following aspects: the division of powers and responsibilities, the goals and result indicators, the policies related to the status of administrative managers, as well as the priority given to managers who are available for placement when positions are being filled.

Our work dealt primarily with the unassigned administrative managers who were available for placement during the month of September 2004. Our investigations were conducted in the following business units: Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle, Service du développement culturel et de la qualité du milieu de vie, and the Service de la mise en valeur du territoire et du patrimoine, as well as the boroughs of Lachine, LaSalle, Saint-Laurent and Saint-Léonard.

## **OBSERVATIONS AND RECOMMENDATIONS**

### **Division of powers and responsibilities**

Several stakeholders from various corporate departments and the boroughs are involved on a daily basis with the management of employees who are available for placement. That requires a well-defined division of responsibilities among the stakeholders, who must respect the areas of authority of the Conseil municipal, the Comité exécutif and the borough council.

**The division of the responsibilities among the various stakeholders is clearly set out on CSTC's intranet site and respects the prescribed areas of authority.** These stakeholders are the:

- CSTC;
- managers of employees who are available for placement or who have been reassigned;
- human resources stakeholders (corporate departments and boroughs);
- administrative managers who are available for placement.

The division of the areas of authority between the Conseil municipal and the borough council was changed when Bill 33 was adopted by the provincial government on December 18, 2003. Thus, by virtue

of the Charter of the Ville de Montréal (the Charter) and the rules for delegating powers to the Comité exécutif, this division of authority is as follows:

*When the City was created on January 1, 2002*

- The Conseil municipal:
  - is the employer of all local government officials and employees and makes the decisions related to their hiring or their dismissal, and determines their working conditions;
  - defines the staffing regulations for filling jobs;
  - prescribes conditions and procedures for identifying, dismissing and reassigning permanent local government officials who are no longer required in a borough.
- The Comité exécutif:
  - exercises the powers of the Conseil municipal with respect to human resource management.
- The Directeur général:
  - exercises the power of appointment for all local government officials, whether they work for a corporate department or a borough, when the appointment results in the permanent employment of an administrative manager.

*Since the adoption of Bill 33 on December 18, 2003*

Powers related to the hiring, dismissal and appointment of borough officials and employees have been transferred to the borough council. However, these powers must be exercised in compliance with the rules established by Conseil municipal, which remains the employer of all local government officials and employees (corporate departments and boroughs). These powers related to the establishment of the rules are exercised by the Comité exécutif, as was the case before December 18, 2003.

### **Policies with respect to the various types of status for managers**

In order for an administrative manager to be available for placement, two criteria are established: the individual must have the status of a permanent manager and must not hold a permanent position. The status of “permanent manager” grants job security since all managers enjoying this status cannot be dismissed from their departments or laid off, nor can they be subjected to a reduction in salary following the introduction of technical or technological improvements or any kind of change or modification in the Ville de Montréal’s structure and administrative system or work procedures. However, a manager who is not a permanent employee can be laid off at any time following notice. At the present time, these are the only two kinds of “status” provided for in the conditions and benefits for administrative managers adopted by the Comité exécutif on February 20, 2002.

At the time the Ville de Montréal was established on January 1, 2002, some administrative managers from the amalgamated municipalities and the Communauté urbaine de Montreal had job security, while others did not. Accordingly, work was carried out by the Direction des relations professionnelles in order to propose new status classifications (permanent, regular and casual), with or without job security, to the Comité exécutif. The Direction des relations professionnelles also conducted an analysis with a view to assigning the appropriate status to each of the administrative managers employed on January 1, 2002. In spite of this work and the presentation of the report to the Comité exécutif on July 2, 2003, the decisions related to the proposed status classifications and the assignment of a status to each employee have still not been taken as at December 31, 2004.

Consequently, not having the policies necessary for establishing which administrative managers employed on January 1, 2002 must be assigned permanent status, it is difficult to identify all of the individuals available for placement for whom reassignment procedures must be initiated.

We must also add that, even for the administrative managers who did not have job security prior to January 1, 2002, Bill 170 and Bill 9, which were adopted by the National Assembly, now grant them job protection, since these bills stipulate that no local government official or employee can be laid off or terminated by sole reason of the creation of the Ville de Montréal or its reorganization. Accordingly, even if these individuals do not meet the first criteria of a person available for placement with respect to job security, the CSTC considers that administrative managers who do not have contracts of specific duration must also be considered as requiring reassignment. In that regard, a policy should also be defined as to the length of this job protection that has been granted.

Thus, with the goal of identifying those administrative managers who had permanent status or who did not have a contract of determined length or a permanent assignment from among the entire group, the CSTC took various steps that we have judged sufficient under the circumstances. Following these measures, the CSTC prepared a list of persons to be reassigned, which it updates on a monthly basis and which is then sent to all the business units. However, our examination of the work accomplished by the Direction des relations professionnelles, which aims to propose a status classification for each of the administrative managers, indicates to us that, if these proposed classifications were adopted by the administration, between 15 and 20 people could be added to the list of administrative managers to be given a permanent reassignment.

Let us mention that these policies related to the status classification of administrative managers will have an important effect on the actual management of people who are available for placement since they will enable the definition of the City's positioning with respect to job security for administrative managers and the resulting possibilities for layoffs. This policy statement is all the more important since the analysis conducted by the Direction des relations professionnelles arrives at the conclusion that a high proportion of the administrative managers and executives who were employed on January 1, 2002 did not benefit from job security.

Furthermore, these Comité exécutif policies related to status must not only cover managers on the job as of January 1, 2002, but also all new managers hired. In this regard, the Directeur général decreed, in his letter of May 5, 2003 dealing with the hiring freeze, that no permanent appointment (promotion or hiring) could take place in any of the business units. Only temporary promotions or offers of employment could be made.

However, this hiring freeze applied to boroughs up until December 18, 2003, the date at which Bill 33, which modified the Charter of the Ville de Montréal, took effect. These modifications to the division of the areas of authority of the Conseil municipal and the borough council ensure that this freeze on hiring and permanent appointments can no longer be applied to the boroughs, since the responsibility for hiring and appointment now falls to the borough councils.

Accordingly, each borough council can make its own decisions in relation to temporary or permanent appointments. These decisions must, however, be taken in compliance with the staffing rules, as well as the rules related to hiring and working conditions that are prescribed by the Comité exécutif.

Thus, from December 18, 2003, to June 30, 2004, the absence of rules with regard to permanent appointments (promotions or hiring) resulted in permanent appointments being made in Lachine, one of the two boroughs that we audited. In the other borough, Saint-Léonard, the appointments were made without changing employee status.

As of June 30, 2004, transitional measures aimed at the appointment of people already employed were adopted by the Comité exécutif. These measures introduced certain limits to the powers of permanent appointment, since they indicated that pending the decision of the Comité exécutif about status classification, managers had to be assigned to their current status. These measures applied from June 30 to September 30 for the boroughs. Afterwards, the staffing rules that were also adopted by the Comité exécutif on June 30, 2004 were to apply. Contrary to the transitional measures, these staffing rules do not specify that managers must be assigned to their current status.

Given that the City is the employer of all its local government officials and employees, whether they carry out their duties in the boroughs or in corporate departments, we believe that conditions and benefits must be applied consistently.

## **Recommendations**

**In order to assign administrative managers employment status in a uniform and equitable manner on a citywide basis, and to allow for the identification of all individuals available for reassignment, we recommend that the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle again submit, as soon as possible, its recommendations to the Comité exécutif with regard to employment status.**

### ***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“Presentation of the proposal with regard to managerial status to the Comité exécutif with a recommendation about the involvement of the boroughs and corporate departments in the identification of employment status and a rule with regard to vacation time for administrative managers available for non-permanent placement.” (Planned completion: April 2005)*

**Furthermore, in the case where the employment status proposed would not grant job security, the Service must recommend a procedure to follow when an administrative manager with such status sees his or her permanent position eliminated. In this context, the Service must also propose policies allowing for the definition of a period during which administrative managers benefit from the job security granted by virtue of Bill 170 and Bill 9, which were adopted by the National Assembly.**

### ***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“Development and dissemination of staffing rules applying to managers in situations where their position is eliminated.” (Planned completion: March 2005)*



**Finally, once employment status has been assigned to each of the administrative managers and policies have been established with regard to job security as granted by Bill 170 and Bill 9, the CSTC will have to make sure it updates the list of individuals available for placement.**

***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“Correction of the information in the register of positions and update of the list of employees available for placement.” (Planned completion: May 2005)*

**Priority granted to managers available for placement when positions are being filled**

Prior to the decentralization of hiring and appointment powers to the boroughs, the Directeur général specified the following in a letter sent to the heads of the business units on May 5, 2003:

- Positions were to be filled on a priority basis by giving first consideration to employees available for placement;
- Employees available for placement would have to accept the opportunities for reassignment proposed to them, in compliance with the collective agreements.

This letter was intended for the corporate departments as much as the boroughs. However, since December 18, 2003, boroughs were no longer bound by the directives in this letter. For that reason, it was important that the staffing rules be adopted as quickly as possible in order to ensure consistency in the staffing of positions from one business unit to another, whether at the corporate department or borough level.

It was only on June 30, 2004, that the Comité exécutif approved the rules for the staffing of positions. These rules clearly indicate that even before the position is posted, the employees available for placement who meet the position profile must be interviewed. When one of these individuals meets the requirements of the position, he or she can thus be appointed to this position without it being posted.

These rules also stipulate that managers are responsible for the management of those of their employees who are available for placement. This element is also important, since it has a direct effect on the reassignment of these employees. Sound management of employees available for placement contributes to making candidates who have the required skills to meet the needs of business units available to them.

### Filling vacant positions in the boroughs

In order to reassign the greatest possible number of persons available for placement, it is important to be aware of the vacant positions whose requirements correspond to the profiles of those individuals requiring reassignment. When business units wish to fill their vacant positions, the persons available for placement must be made aware of these positions through job postings.

According to our investigation carried out in the boroughs of Saint-Léonard and Lachine, where 22 administrative manager appointments have been made since the beginning of 2004, no positions were posted before appointments were made. According to the information obtained, the boroughs had followed the posting procedure at the time of the temporary appointments made in 2002 and 2003. Given that the individuals assigned temporarily to these positions satisfied the requirements and had been working effectively, the boroughs proceeded to appoint them on a permanent basis without posting the positions over again. It was mentioned in each of the two boroughs that consideration was given to individuals available for placement at the time the postings for these temporary assignments were made. Furthermore, among the 22 appointments made, three involved the reassignment of administrative managers available for placement.

By virtue of the staffing rules adopted by the Comité exécutif on June 30, 2004, the business units must now post any job vacancies they have. Since the appointments made in the two boroughs visited were made before the staffing rules came into effect, the boroughs were not required to post their job vacancies.

### Corporate control over the priority granted to managers available for placement

In order for the CSTC to be able to intervene before job vacancies are posted, it requires an up-to-date list of the positions to be filled. In addition, the business unit involved must have the short-term intention of filling its positions, which is not always the case. As a result, even though the CSTC examines the list of positions to be filled on an ad hoc basis, it more often intervenes when the position is posted or appointments are being made.

Representatives of the CSTC examine all the postings issued by the corporate departments and the boroughs with a view to identifying whether people available for placement correspond to the profiles of the positions needing to be filled. If such is the case, the CSTC communicates with the individuals in Human Resources who have posted job positions to suggest they meet these people.

Furthermore, when permanent appointments are being made, it is also expected that, as a stakeholder in the procedure, the CSTC can give its opinion as to whether it knows of a person available for placement who could have filled the position. However, since the transfer of the appointment powers to the boroughs, this control is only exercised for the appointments made by corporate departments. In this regard, there were few appointments in 2004, given the freeze in hiring and permanent appointments that was in effect.

Consequently, we believe that the controls exercised by the CSTC are sufficient to assure the Direction générale that priority has been given to people available for placement in the corporate departments. As for the boroughs, since the borough councils are obliged to respect the staffing rules issued by the Comité exécutif in June 2004, we believe that the CSTC should inform the Direction générale when, in its opinion, priority was not granted to people available for placement when appointments were being made.

#### **Recommendation**

**In order to improve the control over the application of staffing rules that grant reassignment priority to individuals available for placement, the CSTC should inform the Direction générale when, in its opinion, priority has not been given to administrative managers who are available for placement when permanent appointments are being made in the boroughs.**

#### ***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“Implementation of a way of conducting business that ensures that information about appointments adopted at the borough level is obtained.” (Planned completion: February 2005)*

#### Procedures for reassignment at the corporate department level

With respect to managers' control over the management of individuals available for placement, on June 17, 2003 the Directeur général asked all business units to prepare an action plan for each of the employees to be reassigned. The initial deadline of November 30, 2003, was extended to the end of January 2004. This plan had to contain a list of the activities that the employees available for placement were being asked to accomplish. These activities were to include three components:

- development of employability (training, duties, for example);
- documentation of the employee's profile, in order to market his or her skills (curriculum vitae and summary of professional assets);

- the search for jobs that correspond to this profile.

The goals of these action plans were to:

- agree on a program of activities that would lead to reassignment;
- define the level of involvement of the employee in his or her reassignment;
- begin a concrete, structured and sustained reassignment process.

We examined the documents related to 16 unassigned administrative managers available for placement in the Service du développement culturel et de la qualité du milieu de vie (SDCQMV) and the Service de la mise en valeur du territoire et du patrimoine. This study allowed us to note that some action plans were missing and that the information appearing in several of the plans that were prepared was insufficient. In fact, they did not demonstrate that a concrete and structured reassignment process had been carried out and that there was a satisfactory level of employee involvement. For example:

- several of the action plans developed contain little information with regard to the activities to be carried out or that had already been carried out by the employee available for placement (for example, planned and completed mandates, planned and completed training, positions identified that corresponded to the employee's profile, and interviews conducted for these positions);
- several of these plans do not describe the meetings held between the employee available for placement and the manager during the preparation of the plan or the periodic follow-ups. In that connection, these plans do not provide for any signature by the manager or the person to be reassigned to indicate mutual agreement on the elements found in the action plan.

This work also allowed us to note that, in several files, the mandates, the curriculum vitae and background sheets were not up to date or, in some cases, had not been prepared at all.

## **Recommendations**

**In order to allow for a rigorous and structured evaluation of the reassignment steps taken, we recommend that the Service du développement culturel et de la qualité du milieu de vie and the Service de la mise en valeur du territoire et du patrimoine:**

- **make sure they establish reassignment action plans containing sufficient steps with regard to the three prescribed components: the employee profile, his or her employability, and his or her job search;**
- **conduct a follow-up of the steps taken by all unassigned administrative managers who are available for placement.**

**Actions proposed by the Service du développement culturel et de la qualité du milieu de vie**

*“In order to ensure that the reassignment action plans target the necessary steps, the SDCQMV will take the following actions:*

*Employee profile*

- *document the employee profile by updating his or her curriculum vitae;*
- *create a “summary of professional assets” (tool developed by the Centre de soutien à la transition de carrière).*

*Employability*

- *employee will fulfil a temporary mandate or assignment in the administrative unit or in another unit;*
- *employee will participate in training activities.*

*Job search*

- *have the employee subscribe to the job bank that is posted on the intranet;*
- *have the employee research information and documentation about the posted positions;*
- *have the employee participate in the competitions;*
- *have the employee explore job descriptions on the intranet site.*

***(Planned completion: beginning in January 2005)***

*To ensure a follow-up of the steps taken by all the unassigned administrative managers available for placement, the SDCQMV will take the following actions:*

- *keep the curriculum vitae and summaries of professional assets for all unassigned managers available for placement up to date and meet with the managers available for placement;*
- *list the posted vacant positions that correspond to the manager’s profile;*
- *keep a follow-up card describing the steps taken by the managers involved;*
- *bring the posting of a vacant position to the attention of the manager supervising the unassigned administrative manager available for placement;*
- *meet with the administrative managers who are available for placement;*
- *support the administrative managers available for placement in their actions;*
- *keep the action plan up to date on the dates of meetings between the manager and the administrative manager available for placement.”*

***(Planned completion: beginning in January 2005)***

### **Actions proposed by the Service de la mise en valeur du territoire et du patrimoine**

- *“Obtain the updated curriculum vitae, summary of professional assets, and action plans for each of the managers available for placement. **(Planned completion: February 4, 2005)**”*
- *Make managers more accountable for their involvement in the reassignment process by:*
  - *a meeting with managers to provide information on the follow-up measures, the registration for access to job postings, etc.; **(Planned completion: end of February 2005)***
  - *development of a form for tracking the steps being taken. **(Planned completion: January 28, 2005)***
- *Involve the managers in the processes: schedule of meetings, support measures. **(Planned completion: February 11, 2005)***
- *Establish a quarterly follow-up on the steps taken for reassignment. **(Planned completion: February 12, 2005)***
- *Examine the follow-up activities and, where necessary, take the appropriate actions if the measures in place are not sufficient.” **(Planned completion: Ongoing)***

### Evaluation of reassignment incentives

In a report produced by the CSTC in March 2004 on all of the action plans prepared, it was mentioned that of the 471 actions plans requested for all of the employees available for placement, only 63% of them had been received. This report also noted, inter alia, that in some business units the reassignment of people available for placement was proceeding well, while in other business units more precise action plans would have to be developed. One of the conclusions of the report mentioned that new opportunities were being contemplated by the CSTC for the treatment of the most difficult reassignment cases. Among these opportunities, the CSTC was contemplating the external market, transition to borough work and the targeted offer of a severance package. The CSTC intends to produce a new report at the beginning of 2005 concerning its evaluation of how the action plans prepared have succeeded.

Besides the action plans requested by the Direction générale, we have studied whether or not other incentives exist in order to reassign the maximum number of administrative managers. We have identified certain measures with regard to the business units that had people to reassign or positions to fill, as well as measures that were aimed directly at the individuals available for placement.

Although incentives were able to contribute, to a certain degree, to the reduction in the number of administrative managers available for placement, our examination of the list for the month of September 2004 shows that the number of managers available for placement is still significant, and that several of them have been in this situation for several years. In fact:

- in the month of September 2004, 56 unassigned administrative managers were available for placement, representing salaries and ancillary benefits in the order of \$6.3 million;
- among these 56 administrative managers, 21 (38%) were available for placement before the creation of the new city nearly three years ago. The cost of the salaries and ancillary benefits for these employees represents approximately \$2.4 million. These are administrative managers who were already available for placement in the former Ville de Montréal;
- of these 21 individuals, 15 have been available for placement for, on average, seven years. These individuals represent an annual cost of approximately \$1.8 million in salaries and ancillary benefits.

Therefore, in spite of the existence of these measures, a significant number of administrative managers is still available for placement, and has been for a long period of time. Consequently, an evaluation of the effectiveness of the present incentives should be undertaken as soon as possible, with a view to making the necessary adjustments and suggesting, where necessary, other measures aimed at further reducing the number of administrative managers available for placement.

In this regard, we are of the opinion that, among such measures, the performance evaluation for managers of unassigned administrative managers available for placement should automatically consider the establishment and execution of a relevant reassignment action plan .

This evaluation of such measures should also take into account the fact that there is a direct link between the length of the period during which an individual is available for placement and the difficulty in reassigning this person. As a result, this evaluation could consider a sequence of measures to be used over time in order to reassign an administrative manager available for placement as quickly as possible. For example:

- a manager wishing to eliminate a permanent position would have to automatically prepare an action plan for reassigning the manager holding the position. That would enable the consideration of the probability that the manager involved would be reassigned quickly when the decision to eliminate the position is made;
- a deadline could be established for the reassignment of a manager available for placement in a comparable position. Beyond this deadline, positions at a lower level of responsibility would automatically be considered for the individual's reassignment.

Finally, decisions related to the City's policies involving job security for administrative managers and the possibility of layoffs that results from it could have a directly positive effect on the management of administrative managers available for placement. However, it nonetheless remains that, in the short term, even if these decisions have the effect of not granting job security to those who did not have it, there will still be a significant number of managers who will have the status of permanent manager. Furthermore, all administrative managers who have been available for placement for a long time already had the status of permanent managers in the former Ville de Montréal.

## **Recommendations**

**In order to promote quick reassignment of administrative managers, the CSTC should, in collaboration with the business units, evaluate:**

- **the reassignment efforts made by various stakeholders (people available for placement, managers and human resource stakeholders) and then report on them to the Direction générale;**
- **the effectiveness of the current incentives.**

**Afterwards, the CSTC should submit its recommendations to the Direction générale as to the adjustments that should be made to the current measures and new incentives that should be instituted.**

### ***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“Production of a qualitative analysis report of the action plans for managers available for placement prepared by the business units. (Planned completion: February 2005)*

*Presentation of the report to the boroughs and the corporate departments. (Planned completion: February 2005)*

*Presentation of the report to the Directeur général.” (Planned completion: February 2005)*

*“Preparation, in collaboration with the Service des finances, of a report on the effectiveness of the current incentives and recommendation to the Directeur général of additional measures promoting the management of managers available for placement. (Planned completion: March 2005)*

*Presentation of the report to the Directeur général.” (Planned completion: April 2005)*



# **CONTRIBUTIONS OF THE VILLE DE MONTRÉAL TO THE INSURANCE PLAN FOR BLUE-COLLAR EMPLOYEES OF THE FORMER VILLE DE MONTRÉAL (SECTION 25 OF THE COLLECTIVE AGREEMENT)**

## **BACKGROUND**

Section 25 of the collective agreement for blue-collar employees of the former Ville de Montréal governs the issue of insurance. At the time this audit was carried out, the agreement in force was the one signed January 28, 1997. Subsections .03 and .04 describe how the contributions of the Ville de Montréal to the insurance plan are calculated, as well as the frequency with which they must be paid to the Canadian Union of Public Employees – Local 301 (the “Union”),<sup>1</sup> which is responsible for contracting insurance policies and managing claims filed by its members.

Accordingly, the Ville de Montréal pays monthly contributions to the Union, comprising a fixed amount (about \$108,000)<sup>2</sup> plus a percentage of the total wages of regular employees, at a rate of 4.40%<sup>2</sup> for regular wages and 4.00%<sup>2</sup> for overtime wages.

The amount of the contribution that must be paid by the Ville de Montréal is calculated monthly by the Division des avantages sociaux. According to the information obtained from the Division, the contribution of the Ville de Montréal to the insurance plan for blue-collar employees of the former Ville de Montréal amounted to \$8.3 million per year, on average, for 2000, 2001, 2002 and 2003.

In the case of regular blue-collar employees, the contributions of the Ville de Montréal completely cover the total cost of the insurance. As for casual blue-collar employees, the Ville de Montréal provides only long-term disability insurance. It does not provide any coverage to retired blue-collar employees.

It is worth noting that when our report was issued in February 2004, the negotiations leading to the adoption of a new harmonized collective agreement covering all the blue-collar employees of the new Ville de Montréal were still in progress.

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1 Now known as the Syndicat des cols bleus regroupés de Montréal – Section locale 301.  
2 \$107,796, 2.55% and 2% respectively, according to the arbitration decision handed down October 4, 2004.

## **METHODOLOGY AND SCOPE**

We carried out our audit with regard to section 25 of the collective agreement for blue-collar employees of the former Ville de Montréal in order to determine to what extent the monitoring mechanisms put into place by the Service des ressources humaines were able, in certain respects, to ensure that this part of agreement was being abided by. We therefore examined the documentation that the Ville de Montréal receives from the Union regarding the insurance policies contracted by the Union and the costs incurred in managing this insurance plan.

Depending on which element was being audited, the financial information and documents examined dated back to 2001 or 2002, as financial information from 2003 was not available.

Our work was carried out exclusively within units of the Service des ressources humaines. It included interviews with managers and employees, the examination of various documents and conducting several surveys that we believed relevant to obtain important pieces of information.

## **OBSERVATIONS AND RECOMMENDATIONS**

### **Insurance documents**

According to subsection .04 of section 25 of the collective agreement, “The Union is bound to apply these funds toward administration or insurance contracts” and to submit all related documentation to the Ville de Montréal.

The documents that the Union must submit to the Ville de Montréal are not named in the section; neither is the time frame in which they must be provided. In our view, it would be reasonable that the list of documents to be sent to the Ville de Montréal include, at the very least, complete copies of the policies currently in effect (types of insurance and coverage), any renewal notices issued and the invoices received for the corresponding premiums, as well as lists of insured employees (indicating the types of insurance and coverage, be it individual or family, for each employee) and an annual financial summary that outlines the contributions received and the costs incurred. We ascertained that neither the Division des avantages sociaux nor the Direction des relations de travail holds any documentation related to insurance. Moreover, we were not able to locate copies of any correspondence between the parties with respect to these documents.

In response to our request, the Direction des relations de travail obtained some insurance documents from the Union, which they proved to be incomplete. Of the four policies received, we were not able to identify which were in force, what the costs were, what the coverage was or whom they insured. The

policies had been issued several years prior and were not accompanied by any documents confirming whether or not they were still valid. There were no invoices for annual premiums attached and no list of insured individuals supplied.

In our opinion, it is essential for the Ville de Montréal to obtain complete documentation so that it can be aware of the issues at play in this matter. The types of insurance contracted, the amounts of the premiums and coverage, as well as the lists of insured individuals (with the required details), represent relevant details that would make it possible to make the appropriate verifications and analyses in order to prepare reports concerning these contracts.

### **Recommendations**

**We recommend that the Division des avantages sociaux obtain from the Union, in compliance with the terms of the prevailing collective agreement, all the documents related to active insurance contracts that are necessary to ensure familiarity with the elements of this file.**

**In the event that the provisions of the new collective agreement stipulate that the Union will have the responsibility, as per the status quo, for contracting insurance policies and managing claims filed by blue-collar employees, we recommend that the Direction des relations de travail, on the one hand, ensure that the relevant sections of the collective agreement specify the documents that the Union must submit to the Ville de Montréal with respect to insurance (policies, financial summary, etc.), as well as the time frames within which the documents must be submitted, and, on the other hand, see to it that these conditions are respected.**

### ***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“A draft section of the agreement submitted by the Ville de Montréal as part of the arbitration process specifies and lists which documents the Union must supply to the Ville de Montréal and at what frequency. This text constitutes a contractual obligation that the Union is bound to respect.”*

*“On October 4, 2004, arbitrator Gilles Lavoie issued his decision, in lieu of a collective agreement between the parties . . . until August 31, 2007. . . . The text proposed as part of the arbitration specifies and lists the documents and frequency of submission. The arbitrator approved the text. Given that these provisions have been in force since January 1, 2005, the Division des avantages sociaux will take the necessary steps with the Union to obtain the concerned documents.” **(The documents were requested from the Union for March 11, 2005)***

## **Union use of insurance contributions paid by the Ville de Montréal**

Section 25 did not clearly identify which groups of blue-collar employees were eligible for insurance coverage (regular employees, casual employees, retirees), the types of insurance policies that could be contracted, or the minimum or maximum coverage that could be offered (in broad terms). The only restriction specified in the section relates to the type of insurance that cannot be contracted by the Union, namely disability insurance. The Ville de Montréal covers this aspect itself.

Among the documents forwarded by the Union to the Direction des relations de travail, in response to our request, there is a financial summary that outlines the insurance contributions (from its members and the Ville de Montréal) received by the Union in 2001 and for the first six months of 2002, as well as the insurance costs that the Union incurred. The amounts indicated by the Union as contributions received from the Ville de Montréal (\$8.3 million in 2001 and \$4.2 million for the first six months of 2002) were corroborated in a report prepared by the Division des avantages sociaux. In addition, we checked certain calculations used to determine the payment made by the Ville de Montréal to the Union for a month chosen at random (March 2002). No errors were detected.

We have reproduced, in the first column of Appendix 1, the information submitted to the Ville de Montréal by the Union for 2001. We focussed our audit on 2001, as information was available for the full year.

According to this summary, there was roughly a \$223,000 surplus in the contributions received. However, given that section 25 does not clearly define which members are covered or which types of insurance or coverage are granted, it is difficult to interpret the results presented by the Union.

We talked to the managers of the Division des avantages sociaux about the use of the payments made by the Ville de Montréal toward the insurance plan contracted by the Union. They confirmed to us, on the one hand, that no financial reports or documents had been submitted by the Union to justify the actual costs of the insurance plan and, on the other hand, that section 25 of the blue-collar employees' collective agreement contains no details as to which categories of employees are insured or as to what kind of coverage is funded by the contributions of the Ville de Montréal. The only references to this matter are found in the insurance brochure distributed by the Union to active members and retirees. As for the managers of the Direction des relations de travail, they believe that, unless otherwise indicated in section 25, the contributions paid by the Ville de Montréal may be used to finance the cost of insuring retirees, as the said section does not specifically exclude them.

Overall, the summary shows that the contributions received by the Union in 2001 were sufficient to cover the costs of insuring its members. However, the situation is different when the amounts are broken down for each group of members. In Appendix 1, the second column represents the breakdown of the total provided by the Union according to the categories of members, when the category was specified in the summary. The amounts that did not fall clearly into a given category were included under the “Others” column. As a result, Appendix 1 shows a total of \$1.8 million in unspent contributions for active members and a \$1.1-million shortfall in contributions for retirees in 2001 (before the apportionment of “Administration Fees – Active and Retired Members” and “Increase in Reserves” and the allocation of the contributions included under “Others”).

This shortfall in the retiree category appears to be expected by the Union, according to an information booklet intended for its retired members, of which we received copy. Dated March 1999, the brochure stipulated that the insurance contributions paid by retirees to the Union covered only roughly 65% of the actual cost of their coverage. However, it remains to be seen if the Ville de Montréal must absorb the costs for insuring this group or any other group of blue-collar employees whose wages are not included in those used to calculate its contributions (casual employees, blue-collar employees on indefinite leave for union business, etc.).

As for the types of insurance presented in the summary, those related to hospital/medical, dental and life insurance may appear to be admissible because, as a general rule, they are included in programs offered by employers. However, this must also be spelled out and the corresponding insurance contracts must respect the limits of coverage that the employer wishes to provide. Furthermore, no details are provided on the costs presented in the summary under the “*ADD Insurance*,” “*Increase in Reserves – SNR, Exemption, Contingency and Stabilization*” and “*Administration Fees – Active and Retired Members*” columns, making it difficult to confirm their admissibility.

In addition, as indicated previously, subsection 25.04 specifies that the Union must not contract disability insurance using funds received from the Ville de Montréal. In an information booklet distributed to its members in December 1998, the Union outlines the group insurance program related to the renewal of the 1995–2000 collective agreement. This booklet mentions coverage for short-term and long-term disability for regular members. There are not enough details provided about the costs presented in the summary to determine which of the costs, if any, are related to this coverage. In the event there are any, they must be deducted, because such coverage is already provided by the Ville de Montréal.

With respect to the “Other” contributions and the expenses related to “Administration Fees – Active and Retired Members” and “Increase in Reserves . . . ,” the summary, as presented, does not make it possible to determine their nature or how they have been distributed among the categories of members.

However, if we work under the assumption that all the costs presented by the Union for its active members are admissible, the unused contributions stand at \$1.8 million for 2001, before allocation to this group of its proportionate share of administration fees and increase in reserves. These two factors account for around \$1 million. Even if the total of these costs were ultimately allocated to offset the \$1.8 million rather than distributed among active employees and retirees, approximately \$850,000 in unused contributions would still remain. The collective agreement does not specify what should be done with annual insurance payments made by the Ville de Montréal that are not spent by the Union.

Moreover, the Ville de Montréal is not aware of the amount of the accumulated reserves. It is therefore difficult to evaluate whether its contributions to the cost of group insurance for blue-collar employees are reasonable.

According to the information obtained, neither the Union nor the Ville de Montréal has requested, at least not during the past three years, that the accounts be balanced and the annual results compiled. Such an exercise would allow the Ville de Montréal to gain knowledge of the situation and be in a position to analyse such elements as the following:

- the costs incurred by the Union compared to the contributions paid by the Ville de Montréal;
- the compliance of the type and coverage of the insurance policies contracted by the Union;
- the validity of the rates in effect in the collective agreement<sup>3</sup> in the event that contributions are unused or insufficient;
- the accuracy of the amount of the taxable benefit pertaining to insurance coverage indicated in the T4, T4A, Relevé 1 and Relevé 2 forms for each employee (amount provided to the Ville de Montréal by the Union).

The purpose of obtaining this information is not necessarily to reduce the contributions of the Ville de Montréal to the insurance plan. Rather it is to underscore the importance for the Administration to have access to all available data so that it can make informed decisions in this regard.

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3 Rates to be applied to total wages in order to calculate the amount of the contributions of the Ville de Montréal toward insurance plans.

## Recommendations

In the event that the provisions of the new collective agreement will require the Ville de Montréal to fund, in whole or in part, the insurance plan and the Union to assume responsibility, as per the status quo, for contracting the insurance policies and managing the claims filed by its members, and that the Ville de Montréal will be required to contribute to the insurance plan on the basis of a percentage applied to the total wages, rather than on the presentation of invoices for premiums paid by the Union, we recommend that the Direction des relations de travail ensure:

- that the relevant sections of the collective agreement stipulate the categories of members that are covered by the contributions of the Ville de Montréal, the types of insurance that can be contracted by the Union, the eligible coverage (in broad terms), and the method used to manage the amounts paid by the Ville de Montréal but unused by the Union;
- that, prior to the signature of the new collective agreement, the appropriate financial analyses be carried out and documented by the Ville de Montréal in order to support subsequent negotiations involving the maintenance or change, as approved by the parties, in the rate of the contributions of the Ville de Montréal.

In order to ensure that the contributions paid by the Ville de Montréal to the Union are used only for the purposes outlined in section 25, we recommend that the Division des avantages sociaux obtain from the Union annual financial summaries including sufficiently detailed information to enable it to determine whether or not the prevailing situation abides by the terms of the agreement.

### ***Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle***

*“The text proposed during the arbitration process specifies which categories of members are covered (active regular employees). Additionally, it specifies that any type of insurance policy may be contracted by the Union, with the exception of disability insurance. Finally, financial analyses produced by the Mercer firm served as the basis for determining the contributions of the Ville de Montréal. The arbitrator approved these texts. . . .*

*When the Division des avantages sociaux receives the documents from the Union, representatives will analyse them to ensure that they comply with the provisions of the agreement. This analysis will subsequently be performed on a yearly basis.”*

APPENDIX 1 – Summary of Insurance Contributions and Costs 2001

	Amounts Provided by the Union	Office of the City General Auditor		
		Breakdown of Costs and Contributions by Category of Member		
		Active	Retired	Other
<b>Insurance Contributions</b>				
Ville de Montréal - Fixed monthly contribution	\$1 295 645	\$1 295 645		
Ville de Montréal - Regular wages (4.4%)	\$6 423 632	\$6 423 632		
Ville de Montréal - Overtime wages (4.0%)	\$604 038	\$604 038		
Ville de Montréal - Subtotal	\$8 323 315	\$8 323 315		
Other	\$500 659			\$500 659
Retirees	\$2 557 953		\$2 557 953	
<b>Total Contributions</b>	<b>\$11 381 927</b>	<b>\$8 323 315</b>	<b>\$2 557 953</b>	<b>\$500 659</b>
<b>Insurance Costs</b>				
<b>Life Insurance</b>				
Active members	\$852 990	\$852 990		
Retired members	\$179 878		\$179 878	
<b>ADD Insurance</b>				
Active members	\$24 122	\$24 122		
<b>Hospital and Medical Insurance</b>				
Active members	\$3 795 952	\$3 795 952		
Retired members	\$3 503 628		\$3 503 628	
<b>Dental Insurance</b>				
Active members	\$1 825 203	\$1 825 203		
<b>Increase in Reserves</b>				
SNR, exemptions, contingencies and stabilization	\$569 500			\$569 500
<b>Total Cost of Insurance</b>	<b>\$10 751 273</b>	<b>\$6 498 267</b>	<b>\$3 683 506</b>	<b>\$569 500</b>
<b>Administration Fees</b>				
Active and retired members	\$407 634			\$407 634
<b>Total Costs</b>	<b>\$11 158 907</b>	<b>\$6 498 267</b>	<b>\$3 683 506</b>	<b>\$977 134</b>
<b>Surplus (Deficit)</b>	<b>\$223 020</b>	<b>\$1 825 048</b>	<b>-\$1 125 553</b>	<b>-\$476 475</b>



## ***MANAGEMENT OF FINANCIAL CONTRIBUTIONS PAID TO NON-PROFIT CULTURAL AND ARTISTIC ORGANIZATIONS***

### **BACKGROUND**

Three subsidizing authorities share the responsibility for supporting cultural and artistic organizations throughout the territory of the Ville de Montréal, namely: the Service du développement culturel et de la qualité du milieu de vie and the Conseil des arts de Montréal, which report to the Conseil municipal, and the boroughs, which report to the borough councils.

The Service du développement culturel et de la qualité du milieu de vie (the Service) manages the support programs for non-profit organizations operating in the cultural sector. In 2004, the support granted under the five programs came from a budget of \$1.9 million.

For its part, the Conseil des arts de Montréal (CAM) also manages subsidy programs intended for artistic organizations. In 2004, the support granted under the programs came from a budget of roughly \$8 million.

Finally, in keeping with the City's Charter, the boroughs can provide financial support to an organization that operates within the borough and has a local cultural development mission. In this respect, the budget allocated to the boroughs in 2004 was less than \$0.3 million.

Since the new city was created on January 1, 2002, major consideration has been given to the harmonization of the programs managed by the various subsidizing authorities and the preparation of a cultural development policy. In this respect, a draft policy was submitted to the Comité exécutif in November 2004 and was the object of a public consultation in January 2005, to be conducted by the Office de consultation publique de Montréal. The Conseil municipal is expected to adopt this policy in spring 2005. This draft policy expresses a strong concern with respect to support for organizations and companies.

## **METHODOLOGY AND SCOPE**

The audit involved making sure that the process for providing financial support to organizations is managed in an efficient manner. Our evaluation criteria particularly focussed on the identification of the expectations of citizens and the cultural sectors, the selection process for applications, the controls implemented to ensure that planned cultural projects or events are carried out as planned and the existence of a framework for reporting on the results achieved.

Our audit primarily focussed on the funding provided in 2004 to cultural organizations as part of the support programs managed by the Service. We also met with the Direction des affaires interculturelles of the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle.

## **OBSERVATIONS AND RECOMMENDATIONS**

### **Sharing of responsibilities**

The Service manages five programs, namely: the Programme de soutien aux grands festivals et aux événements culturels, which has two components – Grands festivals et événements culturels spéciaux and Événements culturels en développement – and four other support programs organized under the Entente de développement culturel 2000–2005, signed by the Ville de Montréal and the ministère de la Culture et des Communications du Québec (MCCQ). These programs are:

- Programme de soutien à l'interculturalisme, which has two components: Échanges et collaborations and Sensibilisation des publics;
- Programme d'action culturelle, which has two components: Activités de développement du jeune public and Présence des artistes dans les quartiers;
- Programme de soutien au développement des organismes culturels montréalais, which has four components: Mise en marché des entreprises culturelles, Promotion des organismes en matière de patrimoine, Aide aux jeunes organismes culturels and Animation culturelle;
- Programme de soutien à l'implantation et à la rénovation d'équipements culturels, which has four components: Financement des études préalables, Soutien à la mise aux normes, Organisation de campagnes de souscription, and Activités de mise en valeur d'un lieu culturel.

For its part, the CAM must harmonize, co-ordinate and encourage initiatives of an artistic or cultural nature within the City's territory and designate the associations, organizations, individuals and cultural or artistic events that deserve a subsidy by determining the amount and recommending payment by the City. Since it was created, the CAM has been managing a general subsidy program for artistic organizations. Since 1983, it has also been managing other support programs for touring programs such as: Jouer dans l'île, Exposer dans l'île, Lire dans l'île, Action! On tourne and Échanges culturels.

In this context, in 2002 the Service received a mandate from the Directeur général in office to harmonize its support programs with those of the CAM and review their roles and responsibilities accordingly. To fulfil this mandate, a steering committee was established, with representatives from the Service, the CAM, the boroughs and the cultural sector.

In July 2003, the steering committee presented a report on the harmonization of Service, CAM and borough programs. This document included an analysis of the support programs in terms of their specific functions while taking into consideration the fields of expertise for which the subsidizing authorities were known.

This analysis served to demonstrate that:

- Some of the interventions of the CAM and the Service no longer corresponded to their mission. For example, the CAM, rather than the Service, should now be responsible for managing the Programme de soutien au développement des organismes culturels – aide aux jeunes organismes culturels (section III) and the Programme de soutien à l'interculturalisme – Échanges et collaborations (section I);
- The Service, rather than the CAM, should be responsible for co-ordinating the Jouer dans l'île program.

The steering committee then recommended that the roles and responsibilities of the various stakeholders (Service, CAM and boroughs) should be defined according to their respective missions.

No action was taken in 2003 to implement the recommendations contained in the report and, as a result, the situation remained unchanged in 2004; furthermore, the roles of the various subsidizing authorities have still not been confirmed.

Moreover, during the course of its work, the steering committee also identified 45 organizations that had received support from both the Service and the CAM in 2002. At the time of the study, the steering committee had concluded that there was no real overlap since the aims of the programs were different. According to the information obtained, the situation was the same in 2003 and 2004. Nevertheless, as a result of this situation and since the Service and the CAM report to the Conseil municipal, the decision-making authority may have to approve more than one subsidy to a single organization, which could lead to ambiguity.

We are of the opinion that the roles and responsibilities of the subsidizing authorities should be confirmed as quickly as possible so as to ensure that each has the same understanding of the scope of each program and, therefore, the extent of their interventions.

### **Recommendation**

**We recommend that the Direction générale take the necessary measures to confirm the roles and responsibilities of the Service du développement culturel et de la qualité du milieu de vie and the Conseil des arts de Montréal with respect to support for organizations so as to ensure that the scope of their interventions corresponds to their respective missions.**

### ***Actions proposed by the Direction générale***

*“The Service du développement culturel et de la qualité du milieu de vie (SDCQMV), in co-operation with the Conseil des arts de Montréal (CAM), will take the necessary measures to confirm their respective roles and responsibilities with respect to the support they provide for organizations in order to ensure that their interventions correspond to their respective missions.*

*Nevertheless, while the report from the steering committee did identify what should be done, the SDCQMV and the CAM should take two new elements into consideration:*

- *The implementation of the new municipal governance structure*  
*In fact, Bill 9, which concerns public consultation on the territorial reorganization of certain municipalities, including Montréal, recognizes the CAM as a metropolitan authority.*

- *The adoption, in 2005, of the City's first cultural development policy. Without making any presumptions concerning the results of the public consultation currently under way on the draft policy, the effect of the City's commitment No. 19 concerning the confirmation of the legal autonomy of the CAM—with respect to its responsibilities in terms of providing support for non-profit, professional artistic organizations, support for the development of artistic disciplines and the recognition of excellence – should be taken into consideration. This commitment was inspired directly by the work of the steering committee.”*

**(Planned completion: December 2005)**

### **Process for allocating financial contributions**

Our audit concerned only those programs managed by the Service. Thus, we examined the Programme de soutien aux festivals et aux événements culturels (for the Grands festivals et événements culturels spéciaux and Événements culturels en développement components) managed by the Bureau des festivals de la direction des événements et équipements – Ville. We also examined the support program for the development of Montréal cultural organizations (section I: Mise en marché des entreprises culturelles and section III: Aide aux jeunes organismes culturels) managed by the Division de l'action culturelle et des partenariats of the Direction du développement culturel et des bibliothèques.

It should be noted that the degree of control required at each step of the process must be proportional to the size of the amount granted to the particular organization.

#### Identification and analysis of needs

The allocation of the financial contributions awarded to non-profit organizations must fulfil the expectations of the public and the needs of the sector. The various components of the programs currently managed by the Service were established during the period from 1987 to 1997. Since the programs were created, steps have been taken in this direction to identify and analyse needs (various studies, satisfaction surveys).

Moreover, following the creation of the new City, the Summit of Montréal served to identify and study the needs expressed by Montréal's cultural and artistic communities. One of the measures announced during the course of the Summit held in May 2002 concerned setting up borough advisory committees on culture, knowledge and heritage.

The City, moreover, has made a commitment in its proposed cultural development policy to create a Conseil consultatif de la culture de Montréal and recommended that each borough set up a cultural advisory body. This should serve to identify the needs and expectations of the public and, ultimately, to adapt support programs accordingly.

**In conclusion, we are of the opinion that several steps have been taken to identify and evaluate the expectations of the cultural sectors on an ongoing basis. Moreover, if the cultural development policy is approved as proposed, a consultation process will be developed and implemented.**

#### Call for applications and analysis of applications for support

In order to ensure that all of the organizations submitting an application for financial support are treated equitably, a structured analysis process must exist. Given the concern for transparency, the various steps in this process should be documented adequately in order to be able to respond to questions from the organizations, the management of the Service or the municipal administration.

First, the Service issues an annual call for applications to the organizations listed in its database. Thus, a pamphlet describing the various programs is sent to 1,200 organizations operating in the sector. The documents for each program and component are also available on the Service's web site.

These documents include the general criteria for programs, as well as for each of their components, objectives, the nature of the financial assistance, specific eligibility criteria, deadlines, evaluation criteria, the list of the documents to be submitted and the application form.

During the course of our audit, we made sure that respect of the eligibility criteria for organizations and the required documents submitted were controlled. We also made sure that the files clearly indicated that projects were evaluated in keeping with the relevant criteria and how the amount of financial assistance granted was determined.

## Eligibility of organizations

With respect to making sure that all of the documents required are received, all of the Programme de soutien au développement des organismes culturels montréalais files studied were complete. As for the Programme de soutien aux festivals et aux grands événements, we noted that, of the 18 files studied, four of the applications recommended for approval by the Comité exécutif did not contain all of the documents that the program required (budget estimates, copies of audited financial statements in the case of section I and copies of financial statements for section II, for example).

As for the controls exercised with respect to the eligibility criteria, we are of the opinion that, if the programs and their components provide for such criteria, given the concern for transparency, it must be demonstrated that each of the organizations recommended respected such criteria. For the two programs studied, we noted that the files contained no visible evidence confirming that all of the eligibility criteria were respected (for example, being in good standing with the various departments of the City, not receiving more than one form of financial assistance from the Service during the course of the same year, being engaged in a regular cultural activity for at least three years, etc.).

Moreover, our tests indicated that some festivals received support under the Programme de soutien aux festivals et aux événements culturels, although the organizations responsible for them were not eligible. At the time of our audit, those responsible for the Bureau des festivals informed us that they were working on developing a new program that would encompass these festivals and for which specific criteria would apply.

## Evaluation of projects and determination of the financial assistance granted

Parameters must be established to distribute the budgeted amounts among the various organizations. We believe that all of the organizations must be evaluated in accordance with a uniform evaluation process. This process must be documented adequately so as to demonstrate the results of the evaluation and the amount of the financial assistance granted.

In keeping with the established process, an evaluation record is produced after applications are examined and it accompanies the decision summary for the support authorization by the Comité exécutif or the Conseil municipal, as the case may be. This record includes: the amount requested, the amount recommended, the description of the project and the evaluation rating. With respect to this, we wanted to examine the documentation supporting this evaluation record.

In connection with the Program de soutien au développement des organismes culturels montréalais (section I: Mise en marché des entreprises culturelles and section III: Aide aux jeunes organismes culturels), each of the applications was examined in keeping with the evaluation criteria provided in each component, based on a weighting that was approved unanimously by the selection committee, which included representatives of the City and the MCCQ, as well as one representative from the sector. The recommendations are then submitted to the City's Comité exécutif and are generally approved as they stand. In the case of the files studied, we noted that an evaluation grid for the program criteria was completed and had been kept. This serves to demonstrate the transparency of the process in order to select interesting projects and justify the choices made in terms of organizations. However, we also noted that the relationship between the evaluation rating and the amount of financial assistance granted was not documented.

With respect to the Programme de soutien aux grands festivals et aux événements culturels (section I: Grands festivals et événements spéciaux), our audit did not confirm that files were studied and financial assistance determined on the basis of objective parameters. Thus, we noted that the evaluation rating is not established in keeping with a documented process that serves to demonstrate the weight granted to each of the criteria established for the component. Moreover, we did not find documents demonstrating the relationship between the evaluation rating, the amount of assistance requested and the amount of assistance granted. Those we met told us that approximately 20 organizations have been supported on a regular basis for several years, which leaves little space for new organizations.

Moreover, our audit included confirmation that the calculation of the financial assistance respected the eligible expenses and the maximum amount provided for by the program and that adequate documentation concerning this calculation was included in the file. We did realize, however, that the files contained no visible evidence confirming the calculation of the financial assistance. Moreover, in the case of two files, we noted that the amount of the financial assistance granted did not respect the nature of the eligible expenses, nor the maximum amount provided for by the program. In our opinion, documentation of the analysis made would serve to demonstrate greater transparency in terms of the choice of organizations supported.



As for the Événements culturels en développement component, the person responsible for the program confirmed that an evaluation record is produced, but not kept. Therefore, our audit did not confirm that the analysis of the files and the determination of the financial assistance granted are based on objective parameters. Moreover, we found no documentation demonstrating the relationship between the evaluation rating, the amount of assistance requested and the amount granted. According to the information obtained, the files are discussed by a selection committee made up of representatives from the Bureau des festivals and one individual from the sector. As in the case of the component discussed above, we are of the opinion that documentation concerning the analysis made would serve to demonstrate greater transparency in terms of the choice of organizations supported.

### **Recommendation**

**In order to demonstrate that all of the requests were handled in a uniform manner and with a concern for transparency, we recommend that the Service du développement culturel et de la qualité du milieu de vie implement a procedure to document their analysis of the applications received, specifically with respect to:**

- **the presence of the documents required;**
- **the respect of all of the eligibility criteria;**
- **the evaluation of projects on the basis of the evaluation criteria provided in the program;**
- **the calculation of financial assistance.**

### ***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*“The Service will improve and systematize some of its management practices. Thus, the following actions will be taken:*

- *Presence of required documents:*
  - *the use of a request receipt form confirming the presence of the required documents in each file;*
  - *the modification required to document the fact that a project is not eligible, should that be the case, will be made to the program management system (database);*
- *Respect for all eligibility criteria:*
  - *the use of a form for each file to confirm that the eligibility criteria are respected;*
- *Evaluation of projects on the basis of the evaluation criteria provided for by the program:*
  - *the keeping of paper copies of the evaluation forms listing the criteria, ratings, and any comments made by the evaluation committee in the files;*

- *Calculation of financial assistance:*
  - *the maintenance of the qualitative evaluation criteria already used to justify the financial support allocated for a project. The quantitative analysis of the eligible expenses for the project will be strengthened and the qualitative criteria documented. This information will be recorded on the evaluation form.”*

**(Planned completion: Spring 2005)**

Estimation of costs pertaining to technical support

In addition to the financial support provided for festivals and cultural events, the Bureau des festivals also provides technical and logistical support.

Among the other factors to be considered when determining the amount of financial assistance to be allocated, the Programmes de soutien aux festivals et aux événements culturels stipulate that the amount of calculation provided by the City is considered. We were not able to confirm that objective criteria are used to consider these costs when calculating the financial assistance, since this calculation is not documented. Moreover, we noted that no formal compilation was made with respect to the costs for technical and logistical support. Therefore, it is currently difficult to consider these costs when calculating the financial assistance. During our audit, the DGTI was about to implement a computer application that would enable municipal departments to account for the costs incurred for festivals and events. We are, however, of the opinion that these costs should be evaluated as soon as possible for each festival and event, since they may be significant in certain cases. For example, for one of the files studied, the organization received a financial contribution of \$35,000 whereas the costs incurred by the City for technical support totalled almost \$200,000.

Moreover, this information should be disclosed in the decision summaries when requests for support are approved by the Comité exécutif or the Conseil municipal, in order to inform them about the significance of such costs. The disclosure of complete information about the actual costs of festivals and events would enable the decision-making authorities to evaluate various possibilities with respect to assuming those costs. Based on preliminary estimates provided by the Service, the costs incurred for technical support would be in the order of \$3 million to \$5 million per year.

## **Recommendations**

**We recommend that the Service du développement culturel et de la qualité du milieu de vie estimate, when required, the costs incurred by the City for technical support for each of the organizations supported.**

***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*“The Service, in co-operation with the municipal departments and the boroughs concerned, will implement this practice (estimating costs) for all the festivals and events (or when necessary) and:*

- adapt the cost estimate form for all events and festivals;*
- take steps with the municipal departments, boroughs and organizations involved in supporting festivals and events to plan mechanisms for collecting and tracking the information needed to estimate these costs;*
- assess the human and financial resources required by the Service and recommend to the municipal administration any administrative measures needed to apply the auditor general’s recommendation.”*

***(Planned completion: Spring 2005)***

**Moreover, we recommend that the Service du développement culturel et de la qualité du milieu de vie systematically disclose this information in the decision summaries in order to provide complete information about the amount of support provided and ensure that the municipal authorities make an informed decision.**

***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*“In order to systematically disclose this information, we will:*

- include this information in the decision summaries concerning financial grants;*
- extend this practice to all festivals and events when the information is available (see the corrective actions for the previous point).*

*Moreover, it should be emphasized that, for the festivals and cultural events that are held on the public domain on an isolated basis, costs will be accounted for after the fact, when they become available (since these costs cannot be predicted) and indicated in the file.”*

***(Planned completion: Spring 2005)***

## Discretionary support – socio-community organizations

During our audit, we noted that, in 2004, certain organizations received support on a discretionary basis from the Direction des affaires interculturelles, at the request of the Office of the Mayor and the Comité exécutif. The budget for this type of discretionary support comes from general administrative expenses (Account 1911) and totalled \$300,000 in 2004.

Several of the requests for support for ethnocultural communities came from socio-cultural organizations that had been refused under the Programme de soutien aux festivals et aux événements culturels (sections I and II), since this type of organization is not eligible. Other requests were submitted directly to the Office of the Mayor and the Comité exécutif. According to the information we obtained, discretionary support was granted to the same types of organizations in 2003. However, we could not determine the amount in question, since this information had not been compiled.

With respect to the requests approved in 2004, there was no call for applications. Moreover, they were not covered by a program with an objective, eligibility criteria, evaluation criteria, criteria for determining the financial assistance to be provided, a list of documents to be provided by the organization, rules concerning the allocation of the amounts provided or the production of status reports. We believe that clear rules should apply to this type of support.

Moreover, in its proposed cultural development policy, the City acknowledges that there is no real program for this purpose and that this anomaly should be remedied. The City also made a commitment to develop a financial assistance program for cultural events that enhance Montréal's ethnocultural diversity and the heritage and traditions of ethnocultural communities. At the time of our audit, the person responsible for the Bureau des festivals informed us that he was working to establish a new program in co-operation with the Direction des affaires interculturelles and that a project was to be submitted to the municipal administration.

## Recommendations

**We recommend that the Service du développement culturel et de la qualité du milieu de vie, in co-operation with the Direction des affaires interculturelles, continue with its efforts to determine the pertinence of implementing a financial assistance program for cultural events enhancing ethnocultural diversity.**

**Actions proposed by the Service du développement culturel et de la qualité du milieu de vie**

*“The Service, in co-operation with the Direction des affaires interculturelles, is currently continuing its efforts to determine the pertinence of implementing a financial assistance program for cultural events.”  
(Planned completion: Spring 2005)*

**Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité culturelle**

*“We agree with this recommendation. We will work with the Service du développement culturel et de la qualité du milieu de vie to determine the pertinence of implementing a financial assistance program for cultural events.” (Planned completion: Spring 2005)*

**If the municipal administration determines that such a program is justified, we recommend that the Service du développement culturel et de la qualité du milieu de vie, in co-operation with the Direction des affaires interculturelles, establish clear rules pertaining to such support.**

**Actions proposed by the Service du développement culturel et de la qualité du milieu de vie**

*“In the event that the municipal administration decides that such a program is justified, the Service will make sure that all of the auditor general’s recommendations and the corrective actions identified in this action plan will serve to establish clear rules concerning the financial support provided for festivals and cultural events.” (Planned completion: Spring 2005)*

**Actions proposed by the Service de la gestion stratégique, du capital humain et de la diversité culturelle**

*“We concur with this recommendation. If the municipal administration determines that such a program is justified, we will work with the Service du développement culturel et de la qualité du milieu de vie to establish clear rules covering this support.” (Planned completion: Spring 2005)*

### Monitoring of projects that receive support

The projects and events that receive support must be monitored, in particular with respect to whether the organization achieves its goals and how it uses the funds it receives. To do this, the agreements signed by the parties must provide for the fulfilment of the objectives stated in terms that are sufficiently clear and measurable, as well as accountability from the organization to demonstrate the achievement of planned objectives and showing how the funds were used. A procedure must serve to document the monitoring of the projects that receive support.

During our audit, we examined the agreements to determine if they contained measurable objectives and provisions concerning such an accountability. We also made sure that the projects were monitored to determine whether they achieved their objectives and that such monitoring was subject to a documented procedure.

#### Planned objectives of the organizations receiving support

Generally, in the case of the support programs managed by the Service, the organization is required to provide, along with the other documents required, a description of the project that includes, among other things, its objectives.

With respect to the Programme de soutien au développement des organismes culturels montréalais, the official program specifies that the clarity of the objectives and expected results, as well as a precise definition of the target audience, are major assets when time comes to evaluate the application. Moreover, examples of such information are provided, such as the number of spectators or visitors reached, or the client segment or age group targeted. It also suggests that the organization indicate the means it intends to use to achieve its objectives, in which neighbourhood, etc. For the files studied in sections I and III of this program, we also noted that several organizations had provided measurable objectives for their projects, along with an action plan for achieving them.

With respect to the Programme de soutien aux festivals et aux événements culturels, we noted that the objectives provided by the organizations were not always presented in measurable terms and that performance indicators were not always worded clearly. For example, one of the organizations presented its project's objective as being "to present a diversified program that highlights the marvellous complexity of cinematographic work." Although we are aware that qualitative objectives may be considered, this type of objective is not measurable and, therefore, it is difficult to determine the extent to which such an objective will have been achieved at the end of the project.

Moreover, we are of the opinion that the wording of the objectives provided by organizations must be in keeping with the program's objectives. Yet, upon reading the programs, we noted that they are not worded in precise terms that would make it easy to measure the results achieved.

In conclusion, although qualitative objectives may be considered in certain cases, we believe that program objectives should be worded in precise and measurable terms, so as to make it easier for the organizations to provide, in turn, more precise objectives with respect to the events and projects supported.

## **Recommendations**

**We recommend that the Service du développement culturel et de la qualité du milieu de vie revise the wording of the objectives for all of its programs and their components so that they are worded in more precise terms that provide for the measurement of expected results.**

### ***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*"In 2004, the Service made a study, in partnership with the MCCQ, of the programs financed jointly by the two governments. This evaluation of the programs for access to the arts and culture was already provided for under the Entente de développement culturel MCCQ-Ville 2000-2005. The focus of the partners with respect to the programs is in keeping with the concern expressed in the auditor general's report.*

*Thus, and as recommended in the report prepared by Sogemap, under the co-ordination of the Direction du développement culturel et des bibliothèques and entitled Évaluation des programmes d'accès aux arts et à la culture inscrite à l'Entente de développement culturel 2000-2005, we will:*

- *establish measurable targets for future programs in order to ensure that the objectives of those programs are achieved;*
- *move the monitoring of the projects towards results-based management.*

*With respect to the Programmes de soutien aux festivals et aux événements culturels, all of these programs were reviewed at the request of the municipal administration in 2004. They are currently in the process of being validated. As a result, the review of the objectives and the addition of measurable targets to ensure that objectives are achieved are also under study."*

***(Planned completion: Spring 2005)***

**Moreover, we recommend that the Direction des événements et des équipements — Ville specify its expectations with respect to measurable objectives to the organizations that receive support through its program so as to facilitate measurement when performance reports are received.**

***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*“The Direction des événements et des équipements – Ville will make organizations aware of the objectives of the Programmes de soutien aux festivals et aux événements.” (Planned completion: Spring 2005)*

Reports prepared by the organizations

With respect to accountability, the agreements signed by the parties require the organization to produce various reports. Thus, in the case of section I of the Programme de soutien des grands festivals et des événements culturels, the agreement states that a financial statement must be submitted within 60 days after the event is held. In other cases, the agreement between the parties stipulates that a performance report and a financial statement on the project receiving support must be produced within three months after the project has been completed, otherwise the organization will not receive another subsidy.

According to the Service’s procedure, when reports are received Service representatives complete a report form that includes the following: financial statement submitted, visibility of the City, visibility of the Québec government department (if any), public reached and other comments.

During the course of our audit, we ensured that sufficient controls had been implemented with respect to receiving these reports, as stipulated in the programs, and that a documented analysis of these reports was completed.

For the files examined, for the Programme de soutien au développement des organismes culturels (sections I and III), the projects were in progress and, as a result, such reports had not been received at the time of our audit. Nevertheless, in the case of the organizations that had also received support in 2003, we noted that a performance report and a financial statement had been received, in keeping with the deadlines provided in the agreement. Following the examination of the analysis of the reports received, we noted that comments are provided with respect to the achievement of the objectives stipulated by the organization. Moreover, for this type of project, we noted that it was possible to obtain assurance that the funding received was used for the purposes intended.



With respect to the Programme de soutien des grands festivals et des événements culturels (major festivals and special cultural events component), our tests revealed that seven out of ten organizations had not submitted their reports concerning the 2004 events, as required by their agreements. At the time of our audit, reminder letters about the 2003 events had been issued in October 2004. Moreover, we noted that reminders concerning 2004 events had not been prepared. We are of the opinion that sufficient control was not exercised with respect to receiving reports from the organizations that received support as part of this component. Since these organizations are supported on a recurring basis and the documents required include a copy of the most recent audited financial statements, most of them send their report with the next request for support.

Since most of the 2004 reports had not been received, we examined the analysis of the 2003 reports. Our examination of the files revealed that little qualitative and quantitative information is provided in these reports. When they are received, the cultural development officers write a brief comment such as “good statement” on the report form. In other cases, no comments are made. The cultural development officers told us that supervision of the logistical and technical support provided for festivals and events takes up a considerable amount of their time and that they did not make any real analysis of the reports provided by organizations (for example, whether they achieved their objectives in terms of the public reached). However, ad hoc analyses are made at the request of the department or the municipal administration. Moreover, we noted that no specific controls had been implemented to ensure that the amounts contributed were used for the purposes intended.

Moreover, since the support granted in this component is provided as part of a program that includes both a general and specific objectives, we are of the opinion that the organizations that receive support should not only have to provide a financial statement, but also a performance report in which they demonstrate the extent to which the expected results were achieved.

With respect to section II of this program, we noted that the reminder letters for the 2004 events were sent out in September 2004, after the deadline indicated on the application form had expired. However, with respect to the analysis of reports, the procedure is the same as for section I.

We believe that reports for each project should be subject to systematic analysis, taking into consideration the relative significance of the amount of funding provided. These reports could serve to compare the performance of an organization over the years, as well as to compare one organization to another and even modify the amount of funding provided or, in a worst-case scenario, eliminate the support entirely. Finally, the analysis of reports should serve to evaluate the extent to which the event or project was able to achieve its expected objectives.

### **Recommendation**

**We recommend that the Direction des événements et des équipements — Ville develop a documented procedure for obtaining both financial statements and performance reports, and analyse them in order to determine the degree to which the expected results are achieved by the organizations and to obtain sufficient assurance that the funds paid are used for their intended purposes.**

### ***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*“In order to establish a documented procedure, we will:*

- *review the report and evaluation forms in the system “de gestion de demandes de subvention” and adapt these forms to the needs of the Bureau des festivals, as well as those expressed by the auditor general;*
- *evaluate the human and financial resources required by the Service and recommend the administrative measures needed to apply the recommendation to the municipal administration.”*

***(Planned completion: Spring 2005)***

### Evaluation of the results achieved by the programs and reporting

In order that the management of the Service and managers can evaluate the extent to which the support given to organizations serves to meet the objectives of the various programs under which it is provided, systematic and permanent reporting mechanisms must exist for informing the municipal administration. To do this, management reports must be prepared periodically and contain pertinent information about the evaluation of the results achieved during the period covered.

At present, two reports covering all of the support programs are prepared by the Service's management. The first is a statistical report on the support granted to organizations and includes the following information: the names of the organizations, the amount granted, and the program under which the funding was provided. The second is a report on the evolution of the support programs (by component) in recent years, specifically with respect to the applications and amounts received, as well as the applications and the amounts accepted.

In Fall 2004, the programs included under the Entente sur le développement culturel 2000-2005 were evaluated. This mandate was assigned as part of the City contract (access to culture) and was to serve to evaluate all of the programs covered by the Entente, in order to determine whether to extend the programs in their current form or in a new version. The conclusions of this evaluation are in keeping with our own observations and recommendations.

We realize that this matter must be the subject of consideration. However, we believe that this exercise is essential for ensuring the extent to which program objectives have been achieved. The evaluation of the results achieved would serve to evaluate the pertinence of maintaining the programs or not and making the required modifications.

### **Recommendation**

**We recommend that the Service du développement culturel et de la qualité du milieu de vie report to the municipal administration on the evaluation of the programs in terms of the results achieved in order to ensure that they continue to meet their priorities.**

### ***Actions proposed by the Service du développement culturel et de la qualité du milieu de vie***

*"The Service will report on the evaluation of programs to the municipal administration through:*

- *continuing the review of all the financial support programs for festivals and cultural events. These programs are currently being validated. (Planned completion: Spring 2005)*
- *assessing the effects in terms of financial resources of hiring an outside firm to evaluate the financial support programs for festivals and cultural events and recommend any necessary administrative measures to the municipal administration. (Planned completion: Spring 2005)*
- *providing the Directeur général of the City, for his preparations for the Mayor's meeting, an annual report on the situation of the financial support programs in order to ensure that they respect municipal priorities. Included in the commitments for the proposed cultural policy (recommendations 42 and 38); (Planned completion: 2006)*
- *assigning an outside firm, on a three-year basis and in co-operation with the MCCQ, to evaluate the programs covered by the Entente de développement culturel 2000-2005, so as to improve the*

*management of these programs and increase the satisfaction of the clientele.” (Planned completion: at the time of the next program evaluation in 2008).*

# ***OVERTIME MANAGEMENT – SERVICE DE LA SÉCURITÉ INCENDIE DE MONTRÉAL***

## **BACKGROUND**

The mission of the Service de la sécurité incendie de Montréal (SSIM) includes saving lives, protecting property and preserving the environment through fire prevention and responses to actual fires. To fulfil its mission, the SSIM has evaluated the risks and accordingly determined the resources it requires (for example, number of fire stations, vehicles and firefighters).

Since the reorganization of the city's territory that took place in January 2002, all the firefighters from all of the former municipalities on the island of Montréal have become members of the SSIM. The SSIM now has 2,300 firefighters (firefighters, lieutenants and captains). Of this number, 1,888 are required to meet operational needs, 351 to offset absences (holidays, illness, work accidents and job vacancies) and 61 to ensure support services for operations (training centre and technical services). These resources are assigned to 142 fire trucks spread over 65 fire stations.

On each shift, a count of the work force available is made and compared with the work force required. When there are insufficient resources available and mitigative measures have been taken, overtime must be implemented (overtime is remunerated at one and a half times the hourly rate). This situation occurs all year long, but is more common during the summer period (May to September), in view of the vacation period.

In 2003, the compilation of data on firefighters' remuneration indicated that overtime amounts to approximately \$12 million. Of this amount, \$7 million was processed by the former Ville de Montréal's payroll system and \$5 million by the payroll systems of the former suburban municipalities. Overtime budgets for 2004 and 2005 amount to \$9.6 million and \$11.5 million, respectively.

## **METHODOLOGY AND SCOPE**

The audit consisted in examining the controls implemented to ensure that overtime is justified and authorized, that appropriate analyses are carried out in order to control its use, that management reports make reference to it and, where necessary, that relevant action plans are developed to deal with it.

Our work focussed primarily on the overtime worked by firefighters during the whole of 2003 and the period from January 1 to August 31, 2004.

## **OBSERVATIONS AND RECOMMENDATIONS**

### **Information system**

Following the reorganization of the city's territory that took place in January 2002, the SSIM has integrated all of the firefighters on the island of Montréal. In spite of this integration, the payroll for firefighting personnel continued to be prepared by each of the former municipalities involved, pending the harmonization of the collective agreements for all firefighting staff. This harmonization was instituted in September 2003, following the signing of a new collective agreement.

In March 2004, the Comité exécutif authorized an expense of \$363,900 for the creation of six temporary positions that would see to the integration of the data on the attendance of some 700 firefighters still paid by the boroughs created from the former suburban municipalities into the former Ville de Montréal's payroll system. In September 2004, the SSIM had completed the consolidation of the payroll system for firefighters in four boroughs.

Additional sums will be necessary in 2005 and 2006 to complete this project and to ensure regular payroll processing while waiting for the implementation of the integrated management system (SIMON).

In the meantime, the SSIM must continue to gather information on overtime from various sources, including the payroll and time management systems of the former Ville de Montréal and the boroughs, and the system that enables estimates to be made of absence rates and expenses for overtime, based on staff allocation sheets from the Division de la prévention et de l'intervention.

Considering that the firefighters' payroll is processed by several systems and that these systems do not all produce the same type of information, the SSIM does not have certain data on the remuneration for all firefighters, which makes overtime management more difficult.

We should also mention that the assessments of absence rates and overtime expenses are sent to SSIM management in the form of graphs and tables, but are not accompanied by explanations based on the major problems encountered and analyses carried out.

For that reason, we have not been able to obtain sufficient explanations justifying the major variations in the assessments of overtime from 2003 to 2004.

In our opinion, the periodic preparation of more complete management reports would enable more effective control of the use of overtime, a better understanding of its causes and easier identification of the measures likely to reduce or limit its increase.

## **Recommendations**

**We encourage the Service de la sécurité incendie de Montréal to continue the integration of the payroll and attendance systems for firefighters in order to have, as soon as possible, the information relevant to sound overtime management.**

### ***Actions proposed by the Service de la sécurité incendie de Montréal***

*"For more than a year, the SSIM has been integrating the payroll and attendance management of all firefighters into a single system, that of the former Ville de Montréal.*

*The SSIM obtained the amount of money necessary for the year 2004. However, the amounts required to ensure the continuation of this activity were not granted as part of the 2005 budget. New representations will soon be made to the City's Directeur général.*

*The stages of the action plan for this integration are the following:*

- *Re-evaluation of needs and representations; (Planned completion: February 2005)*
- *Integration of firefighting personnel and staff members of the former suburban cities." (Planned completion: December 2005)*

**We recommend that the Service de la sécurité incendie de Montréal modify its management reports in order to take into account the results of the analyses conducted with a view to determining the action plans that must be adopted to better target the causes behind the increase in overtime.**

***Actions proposed by the Service de la sécurité incendie de Montréal***

*“While waiting for the complete integration of all information into a single system, the SSIM has extended its daily staff allocation reports—the reports that identify, in each of the fire stations, the number of employees present (regular time and overtime) and absent (vacations, illness, accident, training, etc.) in order to ensure the deployment of the fleet of vehicles—to the entire department. This source of information is only exact when the shift changes take place (7 a.m. and 5 p.m.); all other staff movements that take place after the initial allocation are not recorded. This explains the variance between the absence rate that is compiled at the fire stations and the one that is produced by the City’s systems. This information, which results from the daily staff allocation (the only one presently available), is used for analyses and the production of reports sent to management. The information from the corporate systems is only produced on an annual basis.*

*Furthermore, for the employees who are integrated into the former Ville de Montréal’s payroll system, the SSIM has absence reason codes justifying overtime. This data is incomplete, however, because only about two thirds of all firefighting personnel are included and for that reason it does not allow, except by extrapolation, for complete analyses.*

*We must also mention that the operations division receives this allocation sheet on a daily basis and that the managers responsible for the allocation regularly flag the difficulties encountered and indicate their suggestions for avoiding and reducing overtime. In addition to that, there is another report issued on a monthly basis that illustrates more specifically the changes in expenses for overtime.*

*Action plan:*

- *integration of all available information and analyses; (Planned completion: April 2005)*
- *identification of the additional analyses that have to be carried out once the integration of the payroll systems has been completed; (Planned completion: October 2005)*
- *change to the management report sent to SSIM management.” (Planned completion: February 2006)*



## Budget

The SSIM prepares its budget in concert with the Service des finances. In fact, the SSIM sends the information concerning its work force and the number of response trucks to the Service des finances and, based on this information and data about absences, the latter determines, among other things, the SSIM's regular and overtime budgets.

During our audit work on the preparation of this budget, SSIM managers mentioned that the overtime budget is not prepared on the basis of the most recent data on absences. Consequently, during the years 2002, 2003 and 2004, unfavourable budget variances for overtime were observed for the remuneration of firefighting personnel (firefighters, lieutenants, captains and staff members).

Moreover, in April 2004, the SSIM director wrote to the director of Finances to mention to him that the major reason for the budget shortfall for his department lies in the overtime performed by firefighting personnel. He added that the absence rate for firefighting personnel is the major factor determining the level of overtime expense and that the method currently used to evaluate the absence rate does not take the most recent data into account. In fact, when the budget is being prepared, the assumption that is currently employed for absences corresponds to the average observed during the two complete years preceding the preparation of the budget. Thus, to determine the 2005 overtime budget, the average of the years 2002 and 2003 is used. However, during the past years, the level of absence has not stopped increasing, and the recent collective agreement, by virtue of the *Act respecting Labour Standards*, has added additional potential reasons for firefighting personnel to be absent.

The evolution of the absences to which the SSIM director refers is expressed in person-years and only considers the firefighters paid by the former Ville de Montréal's payroll system (approximately 1,600 firefighters out of the approximately 2,300 who are attached to the SSIM at the present time). The examination of this data indicates to us, among other observations, that the growth in the number of short-term and long-term illnesses and work accidents since 1998 has contributed to increasing the absence rate from 15.8% to 19.8%. As for the real rate of absence for employees whose pay is processed by boroughs created from the former suburban municipalities, data is not available and, as a result, we do not know its impact on the rate of 19.8%.

In May 2004, in light of the increase in this absence rate, the SSIM began a program of temporary assignment of employees on work accident leave. We encourage the Service to take other similar measures in order to reduce this rate further. For example, more elaborate analyses of sick leave could be conducted and a work attendance management program should be implemented.

It is, in fact, possible that an increase in the overtime budget may be required to take into account the increase in the absence rate of firefighting personnel. However, before making representations to the Service des finances in order to obtain additional credits, the SSIM must ensure that it has taken all the measures at its disposal to reduce the absence rate and thereby limit the magnitude of expenditures for overtime.

### **Recommendations**

**We recommend that the Service de la sécurité incendie de Montréal complete the necessary analyses to identify the causes for the increase in the absence rate and the measures that can be taken to reduce it.**

### ***Actions proposed by the Service de la sécurité incendie de Montréal***

*“From the outset, let us mention that the provisions of the new collective agreement add to the number of certain holidays and benefits.*

*On the other hand, the SSIM has at its disposal partial information (for approximately two thirds of firefighting personnel) that does not allow us, except through extrapolation, to conduct the appropriate analyses. Pending access to integrated information, the SSIM will nonetheless proceed with these analyses and take corrective action. In fact, knowing that the increase in the absence rate is essentially caused by short-term and long-term illnesses and work accidents, measures have already been taken to identify the problems involved.*

#### *Action plan:*

- *request for information from the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle and the former suburbs about reasons for absences (short-term and long-term illnesses); analysis of the information; (Planned completion: March 2005)*
- *development and introduction of corrective measures.” (Planned completion: May to December 2005)*

Afterwards, the SSIM should, in concert with the Service des finances, determine the most appropriate method for evaluating the overtime budget as accurately as possible.

***Actions proposed by the Service de la sécurité incendie de Montréal***

*“During the planning of the last budget, representations were made to the Administration and the Service des finances to review budgeting for the firefighters’ total payroll by considering a more recent period of reference in respect to observed absence rates. To date, they have not permitted the necessary adjustments to offset the shortfalls.*

*Since the firefighters’ total payroll is budgeted at net (withdrawals of several millions of dollars are taken a priori from the SSIM’s budget to discount the potential saving related to firefighters who are absent because of short-term or long-term illness), the room for manoeuvre for assuming the overruns caused by the non-realization of the retained budgeting assumptions is, for all practical purposes, non-existent.*

*Action plan:*

- *new effort to raise the awareness of the Administration and the Service des finances.” (Planned completion: May 2005)*

**Collective agreement**

Following the enactment of the law creating the new Ville de Montréal, the collective agreements applicable to firefighting personnel expired on April 30, 2002. In May 2002, talks between the City and the Association des pompiers de Montréal were initiated with a view to signing an agreement with the entire firefighting work force. An agreement in principle was reached in June 2003 and, in September of the same year, the Comité exécutif approved this agreement. The new agreement covers the period from May 1, 2002 to December 31, 2006.

Fiscal framework

The collective agreement includes in appendix E a fiscal framework setting out the cost increases and savings linked to the application of the agreement.

The major cost-increase factors were evaluated by the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle and concerned, inter alia, the wage increases and the improvement in the seniority bonus, whereas the savings factors were identified by the SSIM as being linked to the acceptance by employees of greater responsibilities, the mobility of personnel between fire stations and the implementation of a new structure for the Service.

No report was prepared for the use of the Comité exécutif to inform it of the materialization of the assumptions that served to establish the fiscal framework. In our opinion, since the Comité exécutif approved the collective agreement and its fiscal framework, it should be informed of the degree to which it has been achieved.

### **Recommendations**

**We recommend that the Service de la sécurité incendie de Montréal, in concert with the Service de la gestion stratégique, du capital humain et de la diversité ethnoculturelle, produce—as soon as possible—reports on the degree to which the fiscal framework has materialized for the years 2002 and 2003, and then send a report, on an annual basis, to the Comité exécutif in order to inform it of the situation.**

**If the assumptions used to establish the fiscal framework have not materialized, courses of action for finding solutions in order to correct the situation should be identified and implemented.**

### ***Actions proposed by the Service de la sécurité incendie de Montréal***

*“Under present conditions, in the absence of an integrated information system, it would be extremely laborious (and therefore unthinkable) to repeat an exhaustive evaluation of the real cost of the firefighting personnel’s collective agreement. However, some factors could be verified in an overall manner to identify the trend.*

*The developments currently in progress, that is, the integration of the payroll systems for all firefighting personnel and staff members, as well as the development of an integrated corporate management system, will ensure that we will have adequate tools for making these evaluations for the next collective agreements.*

*Action plan:*

- *general data collection in all of the organizations responsible for firefighting personnel payroll (former Ville de Montréal and former suburban cities); (Planned completion: March 2005)*
- *analysis and preparation of reports for the Administration.” (Planned completion: May 2005)*

*Compensation in time off*

According to the collective agreement, firefighting personnel who perform overtime may, at their request and with the prior consent of the director or his/her representative, be compensated in time off rather than in money. The time off granted is equivalent to one and a half times the number of hours worked in overtime.

The agreement also stipulates that the taking of such accumulated hours in time off is determined in accordance with the needs of the SSIM, after agreement with the director or his/her representative. The accumulated hours that have not been taken during the course of the year are paid to firefighting personnel during the month of January at the hourly rate in force on December 31 of the preceding year.

According to the managers met, the taking of compensation in time off is not authorized during the summer period. In fact, during this period, there are not sufficient substitute firefighters to fill all of the absences and, as a consequence, overtime must be implemented to ensure the maintenance of sufficient coverage for expected risks.

However, article 8.04d of the collective agreement indicates that firefighting personnel can take time off ten times per year, either without pay or by using their accumulated hours of unused sick leave or compensation in time off, to meet their obligations related to, inter alia, the care, health or education of their children. Therefore, by using article 8.04d, firefighting personnel can take time off during the summer period, as well as at other times, by using their accumulated hours of compensation in time off.

In order to have an evaluation of the amount of such time taken off during the summer vacation period, we had a report on this topic prepared from data in the management system of the former Ville de Montréal, given that all of the systems are not as yet integrated (the time management system of the former Ville de Montréal includes data on 1,600 firefighters out of the SSIM's total work force of 2,300).

According to this report, during the period from May 15 to September 15, 2004, the firefighting personnel of the former Ville de Montréal took 23,500 hours from their accumulated bank of hours for compensation in time off.

When overtime is implemented to fill an absence due to an employee taking compensation in time off, it involves an additional cost for the SSIM. In fact, since the time taken off in such a situation is the equivalent of one and a half times the number of hours worked in overtime and since, during the summer period, overtime (also paid at one and a half times the regular rate) must be implemented when this time is taken, the SSIM pays 50% more when employees use such accumulated hours to take time off and overtime must be used to fill in for these absences.

Since the collective agreement provides that the director of the SSIM or his/her representative must agree to pay firefighting personnel in time rather than money, the SSIM could decide to pay the overtime rather than allow employees to accumulate time off, given that the employees take back some of this time during periods when there is a lack of personnel and overtime must be implemented. Furthermore, according to an officer in charge, since the absence rate is increasing and the number of firefighters was reduced in 2004, there are fewer and fewer periods during the year when hours off in compensation for overtime can be taken without the necessity of implementing overtime to fill the resulting absences.

### **Recommendation**

**We recommend that the Service de la sécurité incendie de Montréal examine the effect that taking time off in compensation for overtime has on the entire year and determine a strategy to adopt under these circumstances in order to minimize the consequences for the Service's budget.**

### ***Actions proposed by the Service de la sécurité incendie de Montréal***

*"The SSIM is aware of the problem and it intends to maintain its present position, which aims to prohibit direct recourse to the use of such banked time off in compensation for overtime if it, in turn, results in overtime. At the same time, actions will be taken to attempt to remedy the situation.*

#### *Action plan:*

- *gathering and analysis of data on time off in compensation for overtime; (Planned completion: February to May 2005)*

- *identification and implementation of corrective actions. In the event that the required changes cannot be carried out, the preparation, if applicable, either for discussion by one of the working committees set up as part of the new collective agreement or with a view to the next renewal of the collective agreement, of courses of action for change or negotiation in order to review the prevailing provisions.” (Planned completion: May to December 2005)*

#### Overtime allocation

The collective agreement prescribes that the allocation of overtime will be carried out in accordance with the administrative directive in force and that any change to this directive must be agreed to by both the SSIM and the Association and be communicated to the firefighting personnel by way of a directive.

When the SSIM work force is below the minimum number required and overtime must be implemented, the SSIM must allocate it in accordance with this directive. According to the managers met during our audit, the application of this directive ensures that overtime is performed by personnel at the same reporting level and not by staff who could act in a supervisory position. For example, when a lieutenant is absent, the overtime is offered to another lieutenant, rather than to a firefighter who is eligible to be a lieutenant. This is also true for the position of captain. For this reason, overtime is carried out by staff whose salary level is higher, which contributes to increasing the expense.

We should also note that the human resources provided to fill in for absent staff (351 firefighters) do not include any officers, but only firefighters.

#### **Recommendation**

**We recommend that the Service de la sécurité incendie de Montréal explore the various possibilities for replacing absent officers in the most cost-effective manner possible.**

#### ***Actions proposed by the Service de la sécurité incendie de Montréal***

*“Overtime is administered according to a directive referred to in article 4.08f of the collective agreement.*

Action plan:

- gathering and analysis of data on the cost of replacing officers; **(Planned completion: February to May 2005)**
- identification and implementation of corrective actions. **(Planned completion: May to December 2005)**

This approach involves a review of the entire process for filling and replacing officer and staff member positions.

*In the event that the required changes cannot be carried out, the preparation, if applicable, either for discussion by one of the working committees set up as part of the new collective agreement or with a view to the next renewal of the collective agreement, of courses of action for change or negotiation in order to review the prevailing provisions.”*

#### Vacant positions

Article 13.01 of the collective agreement prescribes that any permanent position covered by the collective agreement for firefighters that is vacant on June 1 of any year is to be filled by September 30 of the same year at the latest, unless the maintenance of the position is no longer justified by the SSIM's needs.

During the past two years, the SSIM has filled firefighter positions on the following dates:

Positions filled	Number of firefighters recruited
September 29, 2003	77
December 15, 2003	16
September 27, 2004	48

According to the data gathered by the SSIM, the number of firefighters absent during the summer period is particularly high, and overtime must be implemented to ensure the maintenance of planned service levels. It is therefore essential that the SSIM have at its disposal the greatest number of staff members possible at the beginning of this period in order to replace absent firefighters. Consequently, it would be advantageous for the SSIM to plan the recruitment of its firefighting personnel so that they are on the job at the beginning of June, rather than in September.



## Recommendation

We recommend that the Service de la sécurité incendie de Montréal plan its recruitment of firefighting personnel in order to fill vacant positions at the beginning of June and to have at its disposal, as a result, a maximum number of resources to replace firefighters absent during the summer period.

### *Actions proposed by the Service de la sécurité incendie de Montréal*

*“Since 1999, the SSIM has chosen the month of June as the optimal time for hiring recruits. Furthermore, the collective agreement required that more frequent recruitment take place in 2000 and 2001. Since then, and exceptionally, the years 2003 and 2004 necessitated the move of the recruitment period to the end of September.*

*Budget and work force planning for 2005 provides for filling vacant positions before the summer period. Unless something unexpected happens, the action plan is the following:*

- *competition for firefighting recruits (advertising, exams, interviews); (**Planned completion: January to May 2005**)*
- *hiring of recruits.” (**Planned completion: June 2005**)*

# **AWARDING CONTRACTS FOR PROFESSIONAL SERVICES**

## **BACKGROUND**

Sections 573 to 573.13 of the *Cities and Towns Act* provide the rules governing the adjudication of contracts by municipal organizations. These rules have been modified significantly in recent years, particularly with respect to awarding contracts for professional services.

In particular, Bill 106, which was adopted on June 14, 2002 (act amending various legislative provisions concerning municipalities), made the rules for awarding this type of contract stricter. Thus, effective November 1, 2002, municipalities must use a two-step system for weighting and evaluating tenders received both by invitation and as a result of public calls for tender. In the past, the use of this type of weighting and evaluating system was optional.

Moreover, the “Regulation respecting the awarding of contracts for certain professional services” went into effect on June 19, 2002. This regulation, which concerns the adjudication of contracts for professional services of an exclusive nature (health professional, engineer, surveyor, architect, chartered accountant, lawyer and notary), established stricter rules for awarding contracts and filled a legal loophole in terms of the services provided by certain professionals to whom municipalities could, in the past, award negotiated contracts for amounts exceeding \$100,000.

By adopting these new legislative provisions, the provincial government specifically intended to reinforce the framework for awarding contracts and to establish transparent, simple and equitable rules for selecting contractors.

## **METHODOLOGY AND SCOPE**

The audit involved ensuring that contracts for professional services are awarded in keeping with a rigorous process that complies with the laws and regulations in effect. Our assessment criteria particularly focussed on the respect for the rules governing the adjudication of contracts (including the prohibition against the division of contracts), the respect for the rules associated with the delegation of authority and reporting, as well as the existence of certain administrative aspects underlying this process.

Our audit focussed primarily on the contracts for professional services awarded during the course of 2003, following public calls for tenders, calls for tenders issued by written invitation to suppliers and contracts awarded following negotiations within the following business units: Service des affaires corporatives, Service des infrastructures, du transport et de l'environnement, Service des services administratifs, the borough of LaSalle and the borough of Saint-Léonard.

## **OBSERVATIONS AND RECOMMENDATIONS**

### **Compliance with the laws and regulations in effect**

#### Respect for the rules governing the awarding of contracts

Section 573 of the *Cities and Towns Act*, as well as the Regulation respecting the awarding of contracts for certain professional services (of an exclusive nature), set the rules applying to the awarding of contracts that must be respected by municipal organizations.

These rules differ, among other things, according to the amounts at issue, whether it is a matter of exclusive or non-exclusive professional services or services covered by an exception provided in the act (for example, the act allows municipal organizations to award negotiated contracts, regardless of the amount, if the professional service is required as part of a legal or quasi-legal remedy).

In keeping with section 573 of the *Cities and Towns Act*, it is generally stipulated that contracts worth less than \$25,000 can be awarded following negotiations, contracts worth between \$25,000 and \$99,999.99 can be awarded following tenders solicited by written invitation from at least two suppliers, while contracts worth \$100,000 or more can only be awarded following a public call for tenders. In addition to this general rule, in the case of all contracts for professional services worth \$25,000 or more, for which the municipality must issue a public call for tenders or request tenders by invitation, the municipality must use the two-step weighting and evaluating system. Thus, during the first step, the municipality evaluates the quality of the service offer according to predetermined criteria in order to eliminate any tenders that do not attain a passing grade of 70%. The price of the offers is only considered during the second step.

In order to assess the degree to which the rules for awarding contracts were respected, we studied files concerning 30 contracts for professional services for all of the five business units selected. To this sample, we added a selection of six other contracts specifically awarded by business units that existed under the former MUC but are now included within the corporate departments initially targeted. Therefore, we examined a total of 36 contracts awarded in 2003.

Considering, among other things, the nature of the professional services and amounts in question, we

examined the degree to which each contract in the sample complied with the applicable rules. Thus, the following audit subcriteria were examined:

- the method for awarding the contract complied with the general rule stated in section 573 or in the Regulation respecting the awarding of contracts for certain professional services of an exclusive nature;
- in the case of tenders requested by invitation, the invitation was issued **in writing** to at least **two** suppliers;
- in the case of a public call for tenders, this call for tenders was published in the electronic tendering system accessible to all contractors **and** in a newspaper distributed within the territory of the municipality. The electronic tendering system must be that approved by the government;
- the deadlines for receiving tenders complied with those provided in the law, namely 8 days for tenders requested by invitation and 15 days for a public call for tenders;
- in the case of tenders requested by invitation and a public call for tenders:
  - all of the tenders were opened in public in the presence of at least two witnesses and at the date, time and place indicated in the request for the tenders;
  - a two-step weighting and evaluating system was used to assess the tenders received, in keeping with the rules stipulated in section 573.1.0.1.1. of the *Cities and Towns Act*.

#### *Borough of LaSalle*

Six of the 36 contracts studied concerned the borough of LaSalle. For this borough, the sample included three contracts for amounts between \$25,000 and \$99,999.99 and three other contracts for amounts less than \$25,000.

Based on the results of the tests conducted, we can conclude that contracts for the borough of LaSalle are generally awarded in keeping with the laws and regulations in effect. However, we did note certain exceptions.

On the one hand, one of the cases studied concerned a firm specializing in office technology with a mandate to provide consulting, support and computer equipment maintenance services for the borough. During the course of 2003, a total of \$335,123 (\$27,926.92 per month, taxes included) was paid to this firm, based on an agreement reached following negotiation, although the rules for awarding contracts required a public call for tenders, given the amounts at stake.

According to the information obtained from those individuals with whom we met, this firm has been providing these services for the borough of LaSalle since 2001. In fact, during the course of 2001, this firm took over a contract that another firm had with the borough for the remainder of its term, which was scheduled to end on June 30, 2001. The contract was then extended by the Comité de transition on a temporary basis, until December 31, 2001, as the new city was established. For 2002, the borough signed a negotiated contract with that same firm to continue to provide, on a monthly basis, the services at the same cost as for the previous year, namely approximately \$31,000, taxes included. This decision was made as a result of the uncertainty created by the municipal merger in respect to the possibility that the Direction des technologies de l'information (DTI) of the Service des services administratifs would offer these services to the boroughs. However, towards the end of 2002, the City's Comité exécutif decided that only the computer resources from all of the departments of the former Ville de Montréal and the former MUC would be integrated under the DTI. As a result, it became clearer that the boroughs that were created from the former suburban municipalities would not be required to use the services of the DTI.

We acknowledge that the creation of the new city, in 2002, resulted in a climate of uncertainty and that it was advisable to proceed cautiously so as to ensure the sound management of public funds. Nevertheless, we are of the opinion that, as of 2003, the change in the situation justified issuing a public call for tenders.

However, it was only during the course of 2004 that steps were initiated to issue a public call for tenders. A five-year contract starting December 1, 2004 was finally awarded to another firm for a monthly fee of \$20,396, taxes included. While promoting the principles of transparency and equity in obtaining the required services, it is interesting to note that the competition associated with the public tender process enabled the borough to enjoy considerable savings compared to 2002 and 2003.

On the other hand, for one of the contracts in the sample that was awarded following a call for tenders requested by invitation, we found no evidence indicating that all of the tenders were opened in public in the presence of at least two witnesses at the date, time and place indicated in the request for tenders. In our opinion, all of the documents attesting to the fact that the rules for awarding contracts were applied properly should be contained in the file prepared for this purpose.

## Recommendations

In order to ensure compliance with the laws and regulations in effect, we recommend that the borough director's office take the necessary measures to ensure that:

- the rules for awarding contracts for professional services are respected and that the underlying process is instituted in a timely manner;
- all of the documents attesting to the fact that the rules for awarding contracts have been applied properly are placed in a file prepared specifically for this purpose.

### *Actions proposed by the borough of LaSalle*

*"The borough of LaSalle generally respects the rules for awarding contracts for professional services. The cases highlighted are exceptions for which we have provided the necessary explanations. Borough directors will be reminded about the rules and proper procedures for awarding contracts for professional services. (Planned completion: March 2005)*

*We will make sure that all of the pertinent documents are placed in the same file at the Division des ressources financières et matérielles." (Planned completion: February 2005)*

### *Borough of Saint-Léonard*

Six of the 36 contracts studied concerned the borough of Saint-Léonard. For that borough, the sample included one contract for an amount greater than \$100,000 and five other contracts for amounts less than \$25,000.

Based on the results of the tests conducted, we conclude that the borough of Saint-Léonard awards contracts in keeping with the laws and regulations in effect.

### *Service des services administratifs*

Eight of the 36 contracts examined concerned the Service des services administratifs. For this department, the sample included two contracts worth more than \$100,000, three contracts for amounts between \$25,000 and \$99,999.99, and three other contracts for amounts less than \$25,000.

Based on the results of the tests conducted, we conclude that the Service des services administratifs generally awards contracts in keeping with the laws and regulations in effect. However, we observed one exception.

In fact, in the case of one contract in the sample, which was awarded following an invitation to submit tenders, we found no evidence indicating that all of the tenders were opened in public in the presence of at least two witnesses at the date, time and place indicated in the request for tenders. In our opinion, all of the documents attesting to the fact that the rules for awarding contracts were applied properly must be contained in the file prepared for this purpose.

### **Recommendation**

**In order to ensure compliance with the laws and regulations in effect, we recommend that the Directeur principal for the Service des services administratifs take the necessary measures to make sure that all of the documents attesting to the fact that the rules for awarding contracts have been applied properly are placed in a file prepared specifically for this purpose.**

### ***Actions proposed by the Service des services administratifs***

*“The Service des services administratifs respects all of the rules for awarding contracts. However, it is possible that the evidence indicating that the rules have been applied is not obvious in the file.*

*In order to provide more evidence that the rules are respected, an internal procedure will be prepared and distributed to all members of the department, reminding them about the documents to be placed in the contract adjudication files.” (Planned completion: June 2005)*

### *Service des affaires corporatives*

Seven of the 36 contracts examined concerned the Service des affaires corporatives. The sample from this department included one contract for an amount greater than \$100,000, two contracts for amounts between \$25,000 and \$99,999.99, and four other contracts for amounts less than \$25,000.

Based on the results of the tests conducted, we conclude that this department awards contracts in keeping with the laws and regulations in effect.

### *Service des infrastructures, du transport et de l'environnement*

Nine of the 36 contracts examined concerned the Service des infrastructures, du transport et de l'environnement. The sample from this department included one contract for an amount greater than \$100,000, three contracts for amounts between \$25,000 and \$99,999.99, and five other contracts for amounts less than \$25,000.

Based on the results of the tests conducted, we conclude that the Service des infrastructures, du transport et de l'environnement generally awards contracts in keeping with the laws and regulations in effect. However, we observed one exception.

In fact, for one of the contracts in the sample, which was awarded following an invitation to submit tenders, we found no evidence indicating that all of the tenders were opened in public in the presence of at least two witnesses at the date, time and place indicated in the request for tenders. In our opinion, all of the documents attesting to the fact that the rules for awarding contracts have been applied properly must be contained in the file prepared for this purpose.

### **Recommendation**

**In order to ensure compliance with the laws and regulations in effect, we recommend that the Directeur general adjoint of the Service des infrastructures, du transport et de l'environnement take the necessary measures to ensure that all of the documents attesting to the fact that the rules for awarding contracts have been applied properly are placed in a file prepared specifically for this purpose.**



***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“Development of guidelines stating the procedures to be followed when opening tenders. (Planned completion: February 2005)*

*Random verification by the Direction de l'administration et du soutien technique during the course of the year to ensure that these guidelines are respected.” (Planned completion: twice a year)*

Prohibition against the division of a contract

Since 2001, section 573 has contained specific provisions concerning the prohibition against dividing a contract (splitting of contracts).

In order to evaluate whether contracts are awarded in compliance with this aspect of the law, we examined the list of contracts for professional services awarded by each of the targeted administrative units in 2003. In this respect, we used a sampling different than that indicated above.

*Borough of LaSalle*

Two files in particular caught our attention. They concerned contracts awarded to a firm of urban planning experts that involved the development of the borough component that would eventually be included in the first master plan for the new Ville de Montréal and the contracts awarded to a specialized engineering firm, specifically with respect to the quality control of materials used for road work as part of projects S.P. 03-984 and S.P. 03-985.

In the first case, it should be noted that, in 2003, the Ville de Montréal was to have begun developing a master plan for its entire territory. Part of this plan was to consist of 27 borough components. The boroughs were responsible for preparing the sections of the plan that specifically concerned their respective territories.

At the beginning of 2003, after the Comité exécutif adopted a special budget for developing Montréal's master plan, the Service corporatif du développement économique et du développement urbain at the time (the Service corporatif) was mandated to manage and control, among other things, the amounts of money involved. In this respect, the portion of the budget to be allocated amongst the boroughs was the subject of discussions between the Service corporatif and the representatives for each of the boroughs. A sum of \$65,000 (taxes included) was then earmarked for the borough of LaSalle.

Upon examining the file, we learned that the borough of LaSalle decided to negotiate and award three contracts worth \$24,999.53 each, for a total of \$74,998.59 (taxes included) to a firm of urban planning experts. Each of these contracts concerned the numerous phases of the analysis that eventually resulted in the preparation of the borough's section of the master plan: typo-morphological analysis of the borough's territory, socio-economic analysis, definition of the urban planning issues for the territory, and the identification and handling of detailed planning sectors for the territory.

Although the various contracts awarded covered separate phases, all of the work done was, nevertheless, closely related and would together serve to prepare a single final product, namely the borough section to be included in the Ville de Montréal master plan. These contracts were closely related as demonstrated by the fact that the invoices submitted by the supplier indicate that the work was done without interruption and major progress had been made with respect to the work even before the contracts were submitted individually to the borough council for approval.

As for the second case examined, the situation observed is particular. In fact, it concerns two contracts for different projects (S.P. 03-984 and S.P. 03-985) awarded in June 2003 to an engineering firm involving the quality control of materials for roadwork. For one of the projects, the original amount of the contract was \$20,051, whereas the amount for the other contract was \$20,089. Both contracts were awarded on a negotiated basis, in light of the amounts at stake and the fact that both projects concerned work to be done on different streets.

However, in December 2003, two other files were created so that the borough council could ratify additional costs of \$7,035 for the contract for S.P. 03-984 and \$12,919 for the contract for S.P. 03-985 awarded to the same firm. With these additional amounts, the total amounts allocated under these contracts was \$27,086 and \$33,008, for an increase in costs of 35% and 64%, respectively, in addition to the contingency fees (approximately 9%) initially included by the firm in each of the original contracts. An examination of the invoices submitted by the firm for this additional work reveals that the work concerned exactly the same streets and the same purchase orders as those covered by the original contracts. Thus, the addition of these amounts moved the contracts into a category for which tenders should have been requested by invitation.

We are aware that certain unforeseeable situations may occur that may require the allocation of additional sums in order to ensure that the work initially undertaken is completed. However, in the case at hand, the scope of the cost overruns appears unreasonable to us.

We were given explanations to the effect that the additional amounts requested served to control the quality of the materials used during the course of other work that was quite separate (for example, rebuilding sidewalks) to the contracts mentioned above. This error could be attributed to a new employee who was not familiar with municipal procedures.

Considering the foregoing and the fact that there is no documentation in the file that would enable us to validate the allegations provided beyond a shadow of doubt, we are unable to state with any certainty that the contract awarding process retained was applied.

Finally, following our analysis of both cases and considering the discussions we had with the managers responsible, we cannot assert without reservation that the law was not respected. However, the manner in which these files were handled casts a shadow of doubt. Based on a concern for greater transparency and equity in the contract awarding procedure, we are of the opinion that it would have been in the interests of the borough to have complied more rigorously with the statutory rules provided for this purpose.

We agree that the wording of section 573.3.0.3 of the *Cities and Towns Act* concerning the prohibition affecting the division of contracts could give rise to greater latitude and many interpretations. Specifically, it is indicated that a municipality may not divide a contract into several contracts having similar purposes, unless the division is warranted on grounds of sound administration. However, we believe that although grounds of sound administration justify an exception to the general rule for awarding contracts, it is up to the managers of the business unit concerned to clearly demonstrate the grounds and document the files accordingly. Based on our examination of the files indicated above, we found no documented argument concerning grounds of sound administration that the borough could have used to support the decisions made.

## Recommendation

We recommend, in order to ensure, on the one hand, compliance with the laws and regulations in effect and, on the other, to promote the principles of transparency, equity and economy underlying the appropriate process, that the LaSalle borough director's office take the necessary measures to demonstrate the grounds of sound administration that could be used in the rare cases when an exception is made to the general rule for awarding contracts and document such grounds in the file prepared to support the decisions made.

### *Actions proposed by the borough of LaSalle*

*"A reminder concerning this will be sent to all borough directors. (Planned completion: March 2005)*

*The Section des ressources matérielles will make sure it obtains the written justification needed in the rare cases when an exception is made to the general rule for awarding contracts." (Planned completion: February 2005)*

### *Borough of Saint-Léonard*

One file in particular caught our attention. It concerned contracts awarded to a firm of urban planning experts that involved the development of the borough component that would eventually be included in the first master plan for the new Ville de Montréal.

In fact, it should be noted that the Ville de Montréal was to have begun developing a master plan for its entire territory in 2003. Part of this plan was to consist of 27 borough components. The boroughs were responsible for preparing the sections of the plan that specifically concerned their respective territories.

At the beginning of 2003, after the Comité exécutif adopted a special budget for developing Montréal's master plan, the Service corporatif du développement économique et du développement urbain at the time (the Service corporatif) was mandated to manage and control, among other things, the amounts of money involved. In this respect, the portion of the budget to be allocated amongst the boroughs was the subject of an agreement between the Service corporatif and the representatives for each of the boroughs. A sum of \$65,000 (taxes included) was then earmarked for the borough of Saint-Léonard.

Upon examining the file, we noted that the borough of Saint-Léonard had, in 2003, awarded to the firm of urban planning experts two negotiated contracts worth \$24,365 and \$23,825, for a total of \$48,190 (taxes included). Each of these contracts concerned the numerous phases of the analysis that eventually resulted in the preparation of the borough's section of the master plan: updating the borough's urban data, identifying the urban planning and development issues for its territory, as well as the identification and handling of detailed planning sectors for the territory.

Although the various contracts awarded covered separate phases, all of the work done was, nevertheless, closely related and would together serve to prepare a single final product, namely the borough section to be included in the Ville de Montréal master plan. These contracts were closely related as demonstrated by the fact that the work was done consecutively, with no real interruption. Moreover, the proposal and the invoices submitted by the supplier clearly indicate that it was a single project, identified as No. G-0454.

We agree that the wording of section 573.3.0.3 of the *Cities and Towns Act* concerning the prohibition affecting the division of contracts could give rise to greater latitude and many interpretations. Specifically, it is indicated that a municipality may not divide a contract into several contracts having similar purposes, unless the division is warranted on grounds of sound administration. However, we believe that, although grounds of sound administration justify an exception to the general rule for awarding contracts, it is up to the managers of the business unit concerned to clearly demonstrate the grounds and document the files accordingly.

According to the information found in the decision files, the contracts were submitted for approval in two stages (one in May and the other in August of 2003). In each case, the grounds given to justify awarding the contract to the firm were as follows: the borough does not have sufficient resources to do this work, a lack of competent professionals in the field prevents the borough from hiring any on a temporary basis, and the firm in question had already worked for the borough and was familiar with the characteristics of its territory.

However, at no time, when the first contract was awarded in May 2003, can we find any information that indicates that the total sum required to prepare the borough's section would be greater than \$25,000. Specifically, the \$65,000 budget allocated by the Service corporatif for this project is not mentioned. In our opinion, it would have been useful, particularly with respect to providing a clear picture of the overall situation, and then for guiding the decisions to be made concerning the preferred method for awarding contracts, for all of the information to be present from the outset.

We are of the opinion that the grounds used by the borough to justify its decision are not sufficient or, at least, not sufficiently convincing to enable it to circumvent the general rule for awarding contracts.

Considering the foregoing and the discussions we had with the managers responsible, we cannot state without reservation that the law was not respected. However, the manner in which this file was handled casts a shadow of doubt. Based on a concern for greater transparency in the procedure for awarding contracts, we are of the opinion that files submitted for approval should be documented better so as to give the council all of the pertinent information needed to make an informed decision at the appropriate time.

### **Recommendation**

**We recommend, in order to, on the one hand, ensure compliance with the laws and regulations in effect and, on the other, to promote the principles of transparency, equity and economy underlying the appropriate process, that the Saint-Léonard borough director's office take the necessary measures to:**

- **provide and document within the file prepared for that purpose all of the information needed for making an informed decision at the appropriate time.**

### ***Actions proposed by the borough of Saint-Léonard***

*"The audit report was submitted to and discussed by the members of the borough management committee. (Planned completion: January 2005)*

*The audit report was submitted to and discussed by the mayor and the members of the borough council. (Planned completion: January 2005)*

*Instructions were given to the directors of borough departments to ensure that decision files concerning the awarding of contracts for professional services are well documented and clearly demonstrate that all of the information required for an informed decision is available." (Planned completion: January 2005)*

*Service des services administratifs*

One file in particular caught our attention. It concerns contracts awarded to a logistics consulting firm that involved a study ordered to identify possible options for reviewing operating procedures and to then confirm the decisions to be made with respect to moving the operations related to the mechanical and specialized shops (700 Rosemont Blvd.).

In this case, the department negotiated two contracts with this firm. The first was approved in December 2002, for the amount of \$14,723.20, taxes included, while the second was approved in April 2003, for the amount of \$24,730.38, for a total of \$39,453.58.

We met the person responsible for this matter within the department. This individual confirmed that the two mandates assigned to the firm were related but that the second contract for \$24,730.38 would not have been awarded if a new element had not been added to the file.

In fact, the department initially planned for the study to focus on the construction of a new facility to house the specialized shops. However, in 2003, when an existing building (Viau St. site) became available on the real estate market, the original focus had to be changed. As a result, it was apparently decided to give the firm in question a second mandate so that it could also assess the feasibility of moving the activities of the specialized shops to existing facilities.

Although the explanations provided seem plausible to us, our examination of the files prepared to support the decisions made do not allow us to assess the alleged facts. Certain elements in the file even leave us somewhat perplexed as to whether the adjudication process retained was respected, namely:

- the decision summary supporting the second contract awarded does not indicate that this mandate was required as a result of new events affecting this matter. Moreover, the justifications that appear in this file give no indication that it was a continuation of a mandate initially started in 2002;
- for the two contracts awarded, we noted that the proposals submitted by the firm were virtually identical in all aspects. In fact, in both cases it is mentioned that the study would concern the following elements, among others: description of the activities to be performed in the shops, visit of similar facilities in former peripheral municipalities, identification and assessment of possibilities for improving operations. Yet, there is no mention of the fact that the work for the second contract was required because a new option was available, namely moving to an existing site;

- the supplier's proposal that accompanied the awarding of the first contract in 2002 clearly indicates that the work would end with the presentation of a report summarizing the results of the study. Yet, although this work was invoiced and paid in full, no report was prepared following this first mandate. The only report prepared by the firm is that which completed the work done after the second contract was awarded in 2003;
- upon examining the invoices submitted by the supplier, we noted that the work for the second contract awarded was entirely completed even before the contract was approved by the department's Directeur général adjoint. In fact, the invoices submitted were dated February 28 and March 28, 2003, whereas the Directeur général adjoint approved the expense on April 10, 2003.

Considering the foregoing and the discussions we had with the manager responsible for this matter, we cannot state without reservation that the law was not respected. However, the manner in which these files were handled casts a shadow of doubt. Based on a concern for greater transparency and equity in the contract awarding procedure, we are of the opinion that it would be in the interests of the department to comply more rigorously with the statutory rules provided for this purpose.

We agree that the wording of section 573.3.0.3 of the *Cities and Towns Act* concerning the prohibition affecting the division of contracts could give rise to greater latitude and many interpretations. Specifically, it is indicated that a municipality may not divide a contract into several contracts having similar purposes, unless the division is warranted on grounds of sound administration. However, we believe that although grounds of sound administration justify an exception to the general rule for awarding contracts, it is up to the managers of the business unit concerned to clearly demonstrate the grounds and document the files accordingly.

We are of the opinion that providing complete and comprehensible documentation would have made it possible to interpret the facts more accurately, while promoting the principles of transparency, equity and economy that a good adjudication process must demonstrate.



## **Recommendations**

**We recommend, in order to ensure, on the one hand, compliance with the laws and regulations in effect and, on the other, to promote the principles of transparency, equity and economy underlying the appropriate process, that the Direction du Service des services administratifs take the necessary measures to:**

- **provide and document within the file prepared for that purpose all of the information needed for making an informed decision at the appropriate time.**

### ***Actions proposed by the Service des services administratifs***

*“For the matter in question, a first contract was awarded for the amount of \$14,723.20. However, a new element concerning this matter, namely the availability of an existing building on the real estate market and the urgency of the situation caused us to assign a second mandate to the same firm for the amount of \$24,730.38.*

*Therefore, we did not have to use the two-step weighting and evaluating system since the contract was worth less than \$25,000.00.*

*The Service des services administratifs does not encourage the division of contracts. However, in order to promote the principles of transparency, managers and employees will be required to enter all of the information needed to make an informed decision in a file prepared for this purpose.*

*The internal procedure mentioned above will also stress the need to document all of the information needed to make an informed decision in the file that is prepared.”*

***(Planned completion: June 2005)***

**We also recommend that the Direction du Service des services administratifs obtain the necessary approvals before work is begun, so as to respect the priorities established and make it easier to make informed decisions.**

### ***Actions proposed by the Service des services administratifs***

*“The standard practice in our department is to obtain the necessary authorizations before work begins. In the same internal procedure as that mentioned above, managers and employees will be reminded about the importance of obtaining the necessary authorizations before professional services are provided, in order to respect the priorities established and the Cities and Towns Act.” (Planned completion: June 2005)*

#### *Service des affaires corporatives*

Following our examination of the cases selected, we conclude that the contract adjudication procedure was applied in keeping with the laws and regulations in effect.

#### *Service des infrastructures, du transport et de l'environnement*

Following our examination of the cases selected, we conclude that the contract adjudication procedure was applied in keeping with the laws and regulations in effect.

#### Delegation of authority and reporting

##### *Boroughs of LaSalle and Saint-Léonard*

In keeping with section 477.2 of the *Cities and Towns Act* and section 130 of the City's charter, the borough council may adopt a bylaw delegating to any civil servant or employee of the borough the power to authorize expenditures and accordingly enter into contracts on behalf of the borough. Nevertheless, the civil servant or employee who is so delegated must submit a monthly report to the borough council concerning any decision made with respect to the authority delegated.

Moreover, since Bill 33 (*Act to amend the Charter of the Ville de Montréal*) went into effect in December 2003, section 144.7 of the City's charter now stipulates that the borough mayor must submit an annual report on the financial situation of the borough during a council meeting. During this meeting, among other things, the mayor must table a list of all contracts involving expenditures of \$25,000 or more and all contracts for more than \$2,000 signed with a single contractor during the same period, should all such contracts total \$25,000 or more.

### *Borough of LaSalle*

Based on our audit, we can state that all of the rules in effect concerning the delegation of authority and reporting were applied within the borough.

However, based on our examination of the monthly report to the borough council concerning the decisions made, we observed that it was a consolidated list of cheques issued. Therefore, this list includes, without making any distinctions, the expenditures incurred as a result of decisions made by the council as well as those made by a civil servant or employee to whom the council has delegated such authority. In our opinion, the format of this report should be revised so that it is possible for council members to specifically identify expenditures incurred through the exercise of the authority delegated to civil servants and employees. This report would be more useful if the decisions delegated were presented separately for the various administrative units of the borough.

### **Recommendation**

**In order to facilitate consultation, we recommend that the borough director's office take the steps needed to ensure that the report that is presented to the members of the borough council on a monthly basis clearly indicates the expenditures incurred through the exercise of the authority delegated to civil servants and employees according to the various administrative units for which they work.**

### ***Actions proposed by the borough of LaSalle***

*"Since the finance and procurement modules of the new SIMON integrated system will be implemented in the boroughs created from the former suburban municipalities towards the end of 2005 and since there is a moratorium on developing any new applications before that time, our reporting procedure will be revised and improved at the start of 2006." (Planned completion: January 2006)*

*Borough of Saint-Léonard*

Based on our audit, we can state that all of the rules in effect concerning the delegation of authority and reporting were applied within the borough.

Service des services administratifs, Service des affaires corporatives and Service des infrastructures, du transport et de l'environnement

In keeping with section 477.3 of the *Cities and Towns Act* and section 200, Schedule C of the City's Charter, the Comité exécutif must give the Conseil municipal a monthly list of all of the contracts involving an expenditure of more than \$25,000 that it has signed during the course of the previous month. It must also submit a list of all of the contracts involving an expenditure of more than \$2,000 signed with a single contractor since the start of the fiscal year, in the event that all of these contracts result in a total expenditure of more than \$25,000. After submitting this list, and until the end of the fiscal year, the Comité exécutif must submit a monthly list of all contracts worth more than \$2,000 signed with the same contractor during the course of the previous month.

Moreover, the Comité exécutif must give the Conseil municipal a list of the contracts covered by the foregoing paragraph, but instead signed by a civil servant or employee to whom it has delegated its authority to sign contracts.

The civil servant or employee to whom the Comité exécutif has delegated authority must, in keeping with section 477.2 of the *Cities and Towns Act* and the internal regulations of the Comité exécutif concerning the delegation of authority, submit on a monthly basis to the Comité exécutif an overall report regarding the exercise of the authority so delegated, as well as that delegated to a civil servant under his supervision.

Moreover, on an annual basis and in compliance with the provisions of section 474.1 of the *Cities and Towns Act*, at least four weeks before the budget is tabled before the Conseil municipal for adoption, the mayor must report on the financial situation of the municipality during a council meeting. At that meeting, among other things, the mayor must submit a list of all of the contracts involving an expenditure of \$25,000 or more, as well as the contracts for more than \$2,000 signed with a single contractor during the same period, should all such contracts total \$25,000 or more.

The Bureau de l'analyse et du processus décisionnel, which is under the jurisdiction of the Service des affaires corporatives, is the administrative unit responsible for producing the monthly and annual reports that the Comité exécutif and the Conseil municipal require. These reports listing the contracts awarded for professional services are prepared from the data kept in the GDD decision file management system.

Based on our audit, we can state that all of the rules in effect concerning the delegation of authority and reporting were applied.

Nevertheless, with respect to reporting, we believe that improvements could be made to the current process in order to ensure the completeness of the data included in the reports submitted to the various decision-making bodies. In fact, two situations were observed during the course of our audit.

First, we noted that it was possible for a contract not to be included in the reports presented to these bodies. This occurs when the user responsible for completing the decision summary classifies the file in a category and a subcategory other than those that pertain to contractual business (for example, administration and finance). Since the reports concerning the passing of accounts are generated from data included in the category for the awarding of contracts, there is the risk that such reports will be incomplete.

Second, during the Conseil municipal meeting held on October 25, 2004, the mayor, in keeping with section 474.1 of the *Cities and Towns Act*, submitted his report on the financial situation of the municipality. This report should have included the list of the contracts awarded by all of the boroughs and by all corporate departments for the period from October 1, 2003 to September 30, 2004. Based on our audit, we noted that the contracts awarded by the boroughs during the months of October, November and December 2003 were inadvertently omitted from this list.

## **Recommendations**

**In order to ensure the completeness of the reports submitted to the appropriate decision-making bodies in respect to the exercise of authority that is delegated in matters of awarding contracts and to comply with legislation, we recommend that the Bureau de l'analyse et du processus décisionnel of the Service des affaires corporatives take the necessary measures to:**

- **remind those who use the GDD decision file management system about the importance of correctly classifying a file related to the awarding of a contract in the appropriate category and subcategory;**

- **minimize the risk that the content of certain databases in the decision file management system is inadvertently omitted during the preparation of the reports to be submitted to the appropriate bodies in respect to the passing of accounts.**

***Actions proposed by the Service des affaires corporatives***

*“In November 2004, the GDD categories and subcategories were revised so as to ensure that decision elements are filed better.*

*In November 2004, Memo No. 202 was sent out to inform our clientele (+/- 5,000 users) about this.*

*In January 2005, Memo No. 210 was issued with respect to files involving the retention of professional services, informing users to use the Contractual Business category and the Contract for Professional Services subcategory.*

*When SIMON is implemented in the near future, that system will handle contracts for which expenditures are incurred. SIMON will be able to generate reports concerning the passing of accounts. Therefore, the number of information sources will be reduced, limiting the risk that some data will be omitted.”*

***(According to SIMON’S integration schedule)***

**Administrative aspects concerning the awarding of contracts**

*Boroughs of LaSalle and Saint-Léonard, Service des services administratifs, Service des affaires corporatives and Service des infrastructures, du transport et de l’environnement*

In addition to the elements pertaining to compliance with the procedure retained for awarding contracts for professional services, we also examined other aspects, some of which are administrative in nature. Thus, for each of the contracts in our sample, we made sure that an estimate had been provided for the project before the contract was awarded, that a decision summary supporting the decision to award the contract had been prepared, that a treasurer’s certificate had been obtained to certify that the credits required were available and that the contracts contained no renewal clauses that could serve to bypass the rules for awarding contracts that apply to tenders by invitation or public calls for tenders.

Generally, we noted no departure from the appropriate procedure, except for the fact that, in the case of some of the contracts we examined, we could find no evidence in the file that a cost estimate had been made before the contract was awarded.

A cost estimate is important since it can be compared with the price of the tender(s) obtained and used to identify any irregularities or any requirements that the tenderers may misunderstand or interpret incorrectly. The estimate is also important since this stage serves to guide the method to be used for awarding the contracts (by negotiation, invitation for tenders or public call for tenders), so as to ensure that the contract adjudication process complies with the laws and regulations in effect.

Although the preparation of a cost estimate may be an integral part of the contract adjudication process within the borough, we believe that the results of this exercise should be included in writing in the file prepared for this purpose.

### **Recommendations**

**In order to facilitate the making of informed decisions with respect to determining the appropriate method for awarding contracts and improve the analysis of the tenders received, we recommend that the borough director's office ensure that:**

- **cost estimates are prepared, when justified, in a timely manner and contain all of the pertinent information concerning the work to be done;**
- **these estimates are documented and included in the file prepared for this purpose.**

### ***Actions proposed by the borough of LaSalle***

***"A reminder will be sent to all borough directors concerning this matter. (Planned completion: March 2005)***

***The Section des ressources matérielles will make sure that the necessary cost estimates are obtained." (Planned completion: February 2005)***

### **Actions proposed by the borough of Saint-Léonard**

*“The audit report was presented to and discussed with the members of the borough’s management committee. (Planned completion: January 2005)*

*The audit report was presented to and discussed with the mayor and the members of the borough council. (Planned completion: January 2005)*

*A directive was sent to the directors of the borough departments instructing them to make sure that proposals comply with the mandate required and that cost estimates are evaluated in order to ensure that they correspond to the scope of the mandate to be assigned. The decision file should be explicit in this respect and contain this information. When deemed appropriate, the proposal may be appended to the decision file.” (Planned completion: January 2005)*

### **Actions proposed by the Service des services administratifs**

*“Generally, a cost estimate is prepared in any situation necessitating the awarding of contracts, in order, among other things, to define the appropriate method for awarding the contract, assessing the reasonableness of the prices submitted by tenders and identifying any misinterpretations on the part of tenderers. It is possible, however, that this information may not be included in the file prepared for this purpose.*

*When awarding contracts, therefore, the internal procedure mentioned above will remind managers and employees about the need to:*

- *estimate the cost of the work to be done;*
- *document that estimate and include the information in the file prepared for this purpose.”*

*(Planned completion: June 2005)*

### **Actions proposed by the Service des affaires corporatives**

*“Production of an evaluation grid entitled ‘Terms of Reference’ that will contain, among other things, the cost estimate, with the exception of contracts awarded to legal firms, given the nature of the services provided. Managers will nevertheless be made aware of the problem of estimating costs for the services provided by a legal firm so that they can focus on the principles stated. (Planned completion: February 2005)*



*Dissemination and training, if required. (Planned completion: February 2005)*

*Control to be exercised by the Service des affaires corporatives' financial managers when notices of intervention are prepared for decision summaries." (Planned completion: February 2005)*

***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*"For contracts worth \$25,000 or more, a directive will be issued instructing the party requiring the services to include the documentation related to the cost estimate in the call for tender authorization file (GDD). (Planned completion: February 2005)*

*For contracts worth less than \$25,000, a directive will be issued to ensure that the cost estimate is annexed to the specifications for the call for tenders." (Planned completion: February 2005)*

## ***ROAD REPAIR PROGRAM (LOCAL SYSTEM)***

### **BACKGROUND**

Together, the streets and roads located within a city's boundaries form a network. This network is made up of streets, main roads (arterial system) and secondary roads (local system).

On January 1, 2002, the Ville de Montréal adopted By-law 02-003, which indicates arterial and local networks. According to this by-law, the Conseil municipal is accountable for the streets and roads that constitute the arterial system, as identified in the map attached to the by-law (for example, Sainte-Catherine, Saint-Denis and Sherbrooke streets). All the other streets and roads in the Ville de Montréal that are not part of the arterial system fall under the responsibility of their respective borough councils.

As a result, the arterial system is under the control of the Service des infrastructures, du transport et de l'environnement (SITE), whereas the local system is under the control of each of the boroughs.

Streets and roads require ongoing maintenance, renovation and repair. Depending on the extent of the work required, it can be charged either to the operating budget for smaller projects or the capital budget for larger-scale undertakings (repairs).

Road repair work includes the reconstruction and rehabilitation of streets and sidewalks, as well as sewer and water laterals.

Road repair work is planned for in the capital budget (three-year capital works budget or PTI) and funded by borrowings. In 2003, a total of \$51.9 million was earmarked to carry out this type of work—\$45.5 million for the boroughs and \$6.4 million for the SITE.

Employees of the Ville de Montréal and private firms monitor the execution of road repair contracts.

## **METHODOLOGY AND SCOPE**

The purpose of the audit was to determine to what extent the monitoring system in place for the road repair program (local system) is sufficient to ensure that the work is carried out as planned, within the established time frame, the available budget and the prevailing capitalization policy.

Our audit focussed on three boroughs, namely Mercier–Hochelaga-Maisonneuve, Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est and Saint-Laurent. Some of our work was also carried out in the offices of the Service des infrastructures, du transport et de l'environnement (SITE) and the Service des finances.

Our audit applied to the 2003 road repair program. It was conducted in compliance with the value-for-money auditing standards outlined in the Canadian Institute of Chartered Accountants Handbook and involved interviewing managers and employees, examining various documents and performing surveys that we deemed appropriate in order to obtain meaningful information.

## **OBSERVATIONS AND RECOMMENDATIONS**

### **Execution of the road repair program (RRP)**

#### *Saint-Laurent*

In November 2002, the Saint-Laurent borough council approved the capital spending plan for 2003. Accordingly, out of a total budget of \$10.9 million, the borough council chose to invest \$3 million in its RRP, including \$2 million for pavement repairs and \$1 million for sidewalk repairs.

Given the scope of this work, the borough feels that it does not have the specialized skills and equipment required to carry it out. Consequently, the pavement and sidewalk repairs under the RRP are completely outsourced to private contractors.

However, the responsibility for monitoring this work is assumed by the borough's resources. As a result, according to the information obtained, this responsibility had been, for a number of years prior to 2003, shouldered entirely by a single inspector reporting to the head of public works.

Although he continued to handle this duty alone in 2003, this inspector was nevertheless put under the direct authority of an engineer who was appointed to head up a new division, namely the Division du soutien technique et de l'environnement de la Direction des travaux publics. However, in spite of the fact that this appointment was effective in January, it was not until the summer of 2003 that the engineer in charge of this division began to oversee the monitoring of RRP projects.

We observed an overly high concentration of tasks entrusted to one person—the inspector—without adequate supervision on the part of the engineer in charge. We also noted that the documentation on file with respect to the analyses and work performed by the inspector was decidedly inadequate.

Consequently, a review of the tasks performed by the inspector and the supervision provided by the engineer in charge should be undertaken in order to ensure that the engineer can attest that all work has been performed in compliance with the appropriate specifications and that any quantification corresponds to the actual amount of work performed.

It is also worth noting that these shortcomings repeat themselves throughout the process studied, especially with respect to the following activities: cost estimates, approval of tendering documents, analysis of bids, project monitoring, issuance of progress certificates and provisional acceptance of the work.

#### *Mercier–Hochelaga-Maisonneuve and Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est*

In December 2002, the Mercier–Hochelaga-Maisonneuve borough council approved its preliminary list of proposed capital expenditures for 2003. Based on a total budget of \$9.5 million (net), the borough council had initially opted to invest \$2.2 million (net) in its RRP. However, the project roster was modified by the borough council and the RRP budget was set at \$2.9 million (net).

Also in December 2002, the borough council for Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est approved its preliminary list of proposed capital expenditures for 2003. Out of an overall budget of \$13.6 million (net), the borough council initially opted to invest \$3.6 million (net) in its RRP. In April 2003, however, the project roster was modified by the borough council and the RRP budget was set at \$2.4 million (net).

Given the scope of the work, these two boroughs felt they did not have the specialized resources, skills and equipment required to execute this work in its entirety. Consequently, the road paving work was performed by blue-collar employees, whereas the work that required specialized equipment was outsourced to private contractors. Our analysis focussed on the contracts granted by the borough as part of the 2003 RRP.

For these contracts, the responsibilities for the design and monitoring of the work were assumed by the Service des infrastructures, du transport et de l'environnement (SITE). For the boroughs of the former Ville de Montréal, the resources necessary to carry out the majority of the municipal engineering tasks have been retained by the SITE since the creation of the new city in 2002.

As a result, for 2003, the main stages of the road repair process for the local system were broken down as follows between the boroughs and the Direction du transport et de la voirie of the SITE:

<b>Major Steps of the Process</b>	<b>Boroughs</b>	<b>SITE</b>
Scheduling of work	X	
Preparation of plans and specifications		X (Division de l'ingénierie urbaine)
Preparation of calls for tenders and analysis of bids		X (Division de l'ingénierie urbaine)
Approval of contracts granted	X	
Monitoring of work		X (Division de l'ingénierie de la voirie)
Surveying		X (Division de l'ingénierie urbaine)
Accounting of expenses		X (Direction du transport et de la voirie)

We have observed that an effective monitoring environment requires an adequate separation of duties. Accordingly, tasks related to the development of plans and specifications were assigned to a different division than that in charge of monitoring the work. We have also observed that monitoring activities were entrusted to engineers and on-site supervisors based on their respective responsibilities. Generally speaking, documentation on the work carried out by the supervisor and engineer was kept on file.

Nevertheless, during the course of our audit, we did detect certain problems in some stages of the process, especially in terms of work scheduling, approval of the contracts granted and work monitoring.

It is worth noting that, consistent with a decision of the Conseil municipal in May 2004, plans were to transfer the municipal engineering resources of the SITE to the nine boroughs of the former Ville de Montréal during the fall of 2004, so that the boroughs would have enough staff to carry out their responsibilities as self-sufficiently as possible. We are of the opinion that the various elements favouring a well-monitored environment will have to be maintained by the boroughs in order to provide reasonable assurance that work will be executed in compliance with specifications and to ensure that the Ville de Montréal will pay only for the work actually performed.

Some of our recommendations are addressed to the Division de l'ingénierie de la voirie of the SITE. As the process used to monitor the program for the local system is the same as that for the arterial system, our recommendations will apply to both.

#### Scheduling of work—Rivière-des-Prairies—Pointe-aux-Trembles—Montréal-Est

At the beginning of the year, the borough must plan how available credits will be used in order to proceed promptly with calls for tenders and begin work as soon as spring arrives. It is therefore to the borough's advantage to have at its disposal sufficiently reliable information on the condition of its network, the surface area of street sections and the overall unit costs, depending on the type of repair approach used.

Beginning in February 2003, the borough's Direction des travaux publics prepared its preliminary planning. It was the first year the borough carried out this planning.

Given the allocated budget, the Direction des travaux publics first took into consideration the estimated cost of work to be performed in-house (excluding labour), the budget set aside for operations to be carried out on various streets in the borough (for example, minor sidewalk repairs and hot milling), with the balance of the budget available to carry out more extensive projects.

To accomplish this, the Direction des travaux publics carried out a summary evaluation of the preliminary costs to fulfil the priorities selected on the basis of the surface area of streets and overall unit costs, depending on the type of approach used.

In May 2003, following the preparation of plans and specifications by the Division de l'ingénierie urbaine of the SITE, the Direction des travaux publics of the borough noted that some of the information used to evaluate the preliminary project costs showed some discrepancies, in particular with respect to surface areas and unit costs. As an example, for pulverization/stabilization work, \$400,000 out of an anticipated \$750,000 became available, but it was too late in the season to identify other major projects to be executed and initiate the tendering process. In the case of road planing work, a \$20,000 difference on a \$95,000 contract became available. As plans were not required for this type of work, the borough made provisions to execute work of the same nature on other streets.

For the borough to be able to establish the most accurate possible cost estimates for its projects in the preliminary planning stage, we believe that it must have access to reliable information in order to be able to proceed rapidly to the tendering process and begin work as soon as spring arrives. This kind of situation is even more important considering that the annual budgets available for road repairs are limited in relation to capital spending needs.

### **Recommendation**

**We recommend that the borough's Direction des travaux publics ensure that it has reliable information that enables it to establish the most accurate possible cost estimates for its various projects in order to be able to schedule the use of available credits as soon as the season begins and consequently proceed promptly with calls for tenders.**

### ***Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

*“Starting in December 2004, the price estimates from the GESPRO system, based on several years of data, will be compared to the most recent bids and amended on the basis of the degree of market saturation. The higher the volume of work, the more prices tend to rise—and the earlier we initiate the tendering process in the year, the more prices tend to be lower.”*

*Saint-Laurent*

The borough launched two public calls for tenders for sidewalk and pavement repairs. These calls for tenders, which were divided up into several sections, comprised not only the work to be executed under the RRP, but also other tasks, such as the excavation and repair of sidewalks and pavement on smaller areas. Following these two calls for tenders, four contracts were granted:

Description of work	Bids for the four contracts granted	Four contracts granted
<p><b>Call for tenders—Sidewalks</b></p> <ul style="list-style-type: none"> <li>• Section 1: <b>RRP (note 1)</b></li> <li>• Section 2: infrastructure project</li> <li>• Section 3: excavation and repair of sidewalks required by the Direction des travaux publics</li> <li>• Section 4: work required following excavation permit applications (contractors and public utilities)</li> </ul> <p><b>Total—sidewalks (note 2)</b></p>	<p><b>\$1,052,039</b></p> <p>\$558,745</p> <p>\$80,379</p> <p>\$201,340</p> <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> <p>\$1,892,503</p>	Contract No. 1
<p><b>Call for tenders—Pavement</b></p> <ul style="list-style-type: none"> <li>• Section 1: <b>RRP</b> (industrial sector)</li> <li>• Section 2: <b>RRP</b> (residential sector)</li> <li>• Section 3: excavation and repair of pavement pursuant to excavation permit applications</li> <li>• Section 4: excavation and repair of pavement on various streets and service roads required by public works (<b>one part of the work on the service roads is funded by the RRP</b>)</li> </ul> <p><b>Total—pavement (note 4)</b></p>	<p><b>\$556,067</b></p> <p><b>\$870,570</b></p> <p>\$217,121</p> <p>\$398,253</p> <p><b>(note 3)</b></p> <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> <p>\$2,042,011</p>	Contract No. 2 Contract No. 3 Contract No. 4
<p><b>TOTAL—SIDEWALKS AND PAVEMENT (note 5)</b></p>	<hr style="width: 20%; margin-left: auto; margin-right: 0;"/> <p>\$2,042,011</p> <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> <p>\$3,934,514</p>	

**Note 1:** Including a \$130,000 addition to the original contract for four additional streets.

**Note 2:** A single contract was granted for the four sections, including **\$1,052,039 for the RRP—sidewalks.**

**Note 3:** Of this amount, **\$200,000 is earmarked for the RRP** (service roads)

**Note 4:** A first contract was granted for sections 1 and 2, a second for section 3 and a third for section 4. Of the total of \$2,042,011, **\$1,626,637 is earmarked for the RRP—pavement.**

**Note 5:** Of the \$3,934,514 total, **\$2,678,676 is earmarked for the RRP—sidewalks and pavement (contracts No. 1, No. 2 and part of No. 4).**



As part of our audit, we examined the monitoring methods used in the major stages involved in executing the pavement and sidewalk repair work. Our study focussed on the three sidewalk and pavement repair contracts (\$2,678,676) granted under the RRP (section 1—sidewalks, sections 1, 2 and 4—pavement).

Once the budget is known, it is important to evaluate the costs of the work before issuing a call for tenders. This estimate makes it possible not only to determine the approximate volume of work that can be carried out but also to keep a close eye on the amounts of the bids.

During our work, we observed that for the two largest pavement and sidewalk repair contracts, these estimates concerning the nature of the work to be carried out on various street sections, the quantities and the unit prices were determined by an inspector, without being checked or approved by a supervising engineer.

Moreover, some of the supporting information for these estimates was missing or lacking in accuracy. As an example, there were no documents to justify the unit prices used in the cost estimates. According to the information obtained, these prices correspond to the average unit price of bids received in 2002, except for those deemed to be out of market range.

In addition, the estimate for sidewalk repairs indicated quantities (linear feet) without specifying the locations where the work was to be carried out. An amount in linear feet per street section was all that was indicated. As a result, considering that the partial repair of the street sections was all that was required in almost every case (16 out of 17 sections), it would have been important to include in the estimate the precise locations on each of the street sections where the sidewalks needed to be rebuilt (for example, addresses corresponding to the sites where work needed to be performed).

Unlike the two contracts that were examined, the bidding documents related to the contract to repair small areas of pavement on various streets and service roads, which was granted for an amount of \$398,253, does not stipulate the precise locations where the work is to be performed because they are not known at the time the call for tenders is launched. Accordingly, only the overall quantities appear in these documents.

It is only afterward that the inspector prepares a list of locations, based on his evaluation of the road system, the paving work to be carried out as a result of water main breaks and other factors. However, during the course of our mandate, we determined that no list containing the precise locations involved in this rehabilitation work, the nature of the work to be performed or the estimated quantities had been kept on file. Furthermore, according to the information received, the sole copy of this list was given to the contractor by the inspector, without even having been presented for approval to the engineer in charge of monitoring the work.

### **Recommendation**

**In order to control the quality of the estimates prepared, we recommend that the Division du soutien technique et de l'environnement ensure that estimates contain all the relevant information related to the work to be carried out and the various assumptions used to establish the estimated unit costs. We also recommend that these estimates be kept on file and be submitted for formal approval by the engineer in charge of executing road repair work.**

### ***Actions proposed by the borough of Saint-Laurent***

*“All the remedial measures have been implemented.*

*Division of duties: inspections conducted by an inspector and overseen by a supervising engineer. Additional engineer hired on January 5, 2004.*

*Estimates of unit costs: prepared by the inspector, validated and approved by the engineer, compared against budget—all before issuing a call for tenders.*

*Estimated unit costs in 2004: based on the median price of the previous year (2003), adjusted by a factor of 5%, i.e., the variation in market price.*

*Related documents: (work to be executed, estimate of unit costs, etc.) are signed by the supervising engineer, dated and kept on file.”*

### Preparation of tendering documents (Saint-Laurent)

#### *Approval of documents remitted to contractors*

Once the estimate is prepared, the borough council approves the list of street sections on which pavement and sidewalk repairs must be carried out. The council also authorizes the launch of public calls for tenders. Following this, the related tendering documents must be prepared and distributed to those contractors who wish to submit a bid. Among these documents are the bid forms, quotation sheets, specifications, plans, drawings, etc.

Given that tendering documents serve as the contract and define such elements as the nature and amount of the work, as well as the locations where it must be carried out, we believe that these documents should be subject to formal approval by an engineer responsible for the execution of the work.

During the course of our work, we observed that the inspector who prepared the estimates also prepares the “quotation sheet” and provides the information related to the nature of the work to be carried out on the street sections indicated in the “bid form.” These documents show no sign of having been approved by the engineer responsible for the execution of the RRP work, in order to reduce the risk of error in relation to the nature and amount of the work involved. This approval should also make it possible to ensure that the locations chosen to execute the work respect the established priorities.

In addition, the “quotation sheet” features a description of the work (for example, five-foot-wide monolithic sidewalk, curb, repair of catch basins, pulverization, bituminous concrete) as well as the approximate quantities (linear feet, square metres, etc.) required per section for the complete execution of the work. This information essentially reiterates the data in the estimates prepared by the inspector. However, unlike the estimates, the approximate quantities appearing in the quotation sheet are listed according to overall amounts, rather than by street section (for example, 17,800 linear feet of sidewalks). The list of street sections is actually indicated in other document, namely the “bid form.” Consequently, when reading the two documents it is impossible to know what the amount of work per section is.

As a result, given that no other authority, such as an engineer, approves the estimates or the quotation sheets or bid forms, the quality of the information they contain is entirely dependent on the quality of the work of the inspector.

### **Recommendation**

**In order to exercise sufficient quality control over the documents remitted to contractors as part of the tendering process and clearly commit the responsibility of an engineer in relation to the**

**determination of the nature of the work to be carried out and the estimation of quantities, we recommend that the Direction des travaux publics ensure that an engineer in charge of road repair work formally approve all of the documents distributed to contractors.**

***Actions proposed by the borough of Saint-Laurent***

*“In regard to the rehabilitation work to be performed in 2005, the engineer will formally approve all the documents remitted to contractors during the tendering process. In addition, all sidewalk and pavement repair work will be flagged before a call for tenders is issued in order to inform contractors of the specific nature of the work to be executed and enable them to set their prices accordingly.”*

Analysis of the bid prices received—Saint-Laurent

When the bids are opened, an analysis must be performed in order to evaluate the variances between the bid prices and the estimated prices. In the event the differences are considerable, it may be necessary to take certain measures to find the underlying causes.

As an example, when the bid prices are significantly higher than the estimates, it could indicate the need to review the methodology used to prepare price estimates. However, this variance may also be attributable to such factors as a substantial increase in the price of materials or in the demand for this type of work, which would exert an upward pressure on prices.

If the opposite is true and the bid prices fall largely short of the estimates, it may also be necessary to review the methodology used to estimate prices. However, it would also be necessary to ensure that all the work included in the call for tenders had been taken into consideration and to evaluate whether it is financially possible to deliver the work at the stated price and still comply with the specifications. Once these factors have been checked, if the bid is found to be compliant, the evaluation of the level of project monitoring required should take into account the risk associated with such low prices.

While analysing the gap between the estimated prices and the prices bid by the contractors that had been granted the pavement and sidewalk contracts, we noted that there were insignificant variances in respect to the sidewalk repair contract.

However, as far as the main pavement contract is concerned (sections 1 et 2—pavement), we observed that the bid price was roughly 30% under the estimated price. A supplementary analysis also showed that, even in comparison to the price of the pavement contract granted in 2002, the 2003 prices for the most significant components of the contracts granted were under by about 17%.

According to the information obtained, no analysis of the variance between the bid prices and the estimated prices has been conducted. Consequently, we were not able to obtain explanations as to the possible causes of this drop in price between 2002 and 2003.

### **Recommendation**

**In order to ensure adequate monitoring of bid prices and take any necessary corrective measures, the Division du soutien technique et de l'environnement should analyse the variances between bid prices and estimated prices so that it can subsequently include this in the decision summary recommending the granting of the contract. This analysis could also be accompanied by comparisons with the prices of contracts awarded in previous years by the borough of Saint-Laurent, as well as by other Montréal boroughs.**

### ***Actions proposed by the borough of Saint-Laurent***

*“From now on, the decision summary recommending the granting of a contract will take into account the difference between the bid prices and the estimated prices, as well as the analysis of this variance.*

*The technical analysis of each bid must offer a comparison between the prices and the quantities of the contracts obtained and the prices and quantities of the contracts granted the previous year.”*

### *Comparison of locations approved by the borough council and those in the call for tenders*

For the two main pavement and sidewalk repair contracts, we compared the list of the locations approved by the borough council against the lists of street sections that appear in the bid forms.

Although in almost every case, this comparison confirmed that the locations that appear in the bid forms correspond to the list of locations approved by the borough council, we discovered one substitution of streets with respect to sidewalk repair work. This substitution was not approved by the borough council.

Furthermore, additional sidewalk repair work on street sections that were not included in the tendering documents was executed before receiving new approval from the borough council. This involved roughly \$130,000 worth of sidewalk repair work on four street sections.

### **Recommendation**

**In order to ensure that the priorities of the borough council are respected, the Division du soutien technique et de l'environnement should obtain all the required approvals enabling it to make modifications or additions in relation to the locations where road repair work needs to be done before the work is actually executed.**

### ***Actions proposed by the borough of Saint-Laurent***

*"In order to respond economically and efficiently to the requests for substitutions after the approval of the work by council, new procedures were established:*

- *An e-mail and all relevant documentation (such as photographs) are sent to the borough director before work is started.*
- *The borough director obtains the approval of the council members during the full committee's weekly meeting. The work can then start.*
- *During its monthly meeting, a report on all the decisions regarding modifications or additions is submitted to the borough council for its formal approval."*

Granting of contracts—Mercier—Hochelaga-Maisonneuve and Rivière-des-Prairies—Pointe-aux-Trembles—Montréal-Est

When contacts are granted, the borough council must be informed of the nature of the work, the amount of the expenses to be authorized and the locations where the work will be executed. It is then expected that the work be carried out on the specified streets and at the stipulated cost.

*Mercier—Hochelaga-Maisonneuve*

With regard to the four projects for which a public call for tenders was launched, the borough council approved, between March and May 2003, that contracts be granted to four selected contractors, at their bid price, in compliance with the prepared plans and specifications. Moreover, for each of the projects, the borough council authorized the expenses for the execution of the specified work (cost of the contract and incidental expenses).

<b>Nature of work</b>	<b>Bid price</b>	<b>Incidental expenses</b>	<b>Expenses authorized by the borough council</b>
Construction/reconstruction of sidewalks and curbs	\$647,130	\$31,670	\$678,800
Minor sidewalk repair	\$399,980	\$10,020	\$410,000
Planing of pavement	\$169,500	\$2,550	\$172,050
Hot milling	\$144,110	\$3,590	\$147,700
Total	\$1,360,720	\$47,830	\$1,408,550

During the course of our audit, we sought to compare the streets approved by the borough council with the streets listed in the tendering documents. In the case of the sidewalk and curb reconstruction contract, this comparison confirms that the locations that appear in the bid forms do correspond to the list of locations approved by the borough council, as mentioned in the decision summary.

For the contracts for minor sidewalk repairs, planing and hot milling, we were not able to compare the locations that appeared in the bid forms with those approved by the borough council. For these types of work, the quotation sheet specifies that the borough will determine the streets where work will take place before it begins. Therefore, the borough council approved the granting of these contracts without yet knowing the list of locations involved. We are of the opinion that this is the minimum of information that the borough council must have when issuing contracts, especially considering that the borough must prepare this information in any case.

In keeping with a commitment to transparency and in order to respect the priorities of the borough council, we feel that a complete list of streets where the borough intends to carry out work should be authorized by the borough council.

### **Recommendation**

**We recommend that the Direction des travaux publics provide the list of specified streets at the moment all the road repair work contracts are granted in order to respect the priorities of the borough council.**

### ***Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve***

*“The upgrade of the borough’s technical office with the addition of six employees will enable us, starting in winter 2005, to determine the streets and addresses for minor sidewalk repair work as soon as the contract is granted by the borough council.”*

### ***Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

With regard to the five projects for which a public call for tenders was launched, the borough council approved, between May and August 2003, the granting of contracts to five selected contractors, at their bid price, in compliance with the prepared plans and specifications. In addition, for each of the projects, the borough council authorized expenses for the execution of the specified work (cost of contract and incidental expenses).

<b>Nature of the work</b>	<b>Bid price</b>	<b>Incidental expenses</b>	<b>Expenses authorized by the borough council</b>
Pulverization-stabilization and sidewalk reconstruction	\$335,698	\$19,500	\$355,198
Pavement rehabilitation and sidewalk reconstruction	\$469,978	\$12,000	\$481,978
Minor sidewalk repair	\$112,015	\$2,885	\$114,900
Planing of pavement	\$95,000	\$1,500	\$96,500
Hot milling	\$83,242	\$2,158	\$85,400
<b>Total</b>	<b>\$1,095,933</b>	<b>\$38,043</b>	<b>\$1,133,976</b>



In the case of the two first contracts, the locations that appear in the bid forms do correspond to the list of locations approved by the borough council, as specified in the decision summary.

For the minor sidewalk repair and hot milling contracts, we were not able to compare the locations that appear in the bid forms with those approved by borough council. For these kinds of work, the quotation sheet stipulates that the borough will determine the streets where work will take place only before the work begins. The borough council therefore approved the granting of these contracts without having been informed of the list of locations involved. We feel that this is the minimum amount of information that the borough council should have when the contract is granted, especially considering that it is information that the borough must prepare anyway.

With respect to the planing contract, although the bid forms also specified that the borough would determine the streets only before work begins, the resolution of the borough council made reference to the reception of a list of streets. Our audit indicated, however, that extra work was executed on a street that had not been included in the initial list submitted to the borough council.

In order to ensure transparency and respect the priorities of the borough council, we feel that a complete list of the streets on which the borough intends to carry out work should be authorized by the borough council. The council should also be informed of all changes made in the choice of streets.

### **Recommendation**

**We recommend that the Direction des travaux publics provide the list of specified streets at the moment all the road repair contracts are granted in order to respect the priorities of the borough council. Furthermore, any additional streets should also be approved by the borough council before the work is carried out.**

### ***Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

*“Starting in December 2004, the list of streets will be submitted to the borough council and any additional streets will also be identified.”*

#### Monitoring of work

In order to ensure that the work carried out adheres to specifications, the work must be adequately monitored. This requires inspection, which includes quality control executed by laboratory staff and the tracking of project costs. The inspection must make it possible to satisfactorily monitor work whereas quality control must focus on the materials used and their installation during the course of the project. As for cost tracking, it should make it possible to ensure that the specified work is carried out without exceeding the authorized level of spending.

As we mentioned previously, during 2003 the supervision of work in the boroughs of the former Ville de Montréal was assumed by the Division de l'ingénierie de la voirie du SITE. The mandate of this unit addressed RRP contracts as well as water and sewer main contracts for both the arterial and local systems. A total of \$36 million in contracts were supervised by this unit in 2003.

To carry out its mandate, the supervision unit had the following resources in 2003: a head engineer, three project engineers and seven technical officers. In addition, professional service contracts were concluded with two engineering firms: one to monitor planing work and the other to monitor minor sidewalk repairs.

#### *Project timelines—Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est and Mercier–Hochelaga-Maisonneuve*

Establishing project timelines makes it possible to ensure that the work outlined in the specifications is executed during the year according to a schedule that causes the least inconvenience to residents while keeping costs at a reasonable level. Following this, monitoring mechanisms must be put into place to make it possible to provide the required follow-up within the established time frame.

During the course of our audit, we observed that the documents remitted when the call for tenders was launched made provisions for the mechanisms required to track these timelines. As a result, the quotation sheet confirms that the stipulated schedule begins immediately when the director (or an authorized representative) issues a written notice allowing the work to begin. The specifications stipulate that the contractor must execute the work without interruption and with diligence in order to complete the project within the time frame stipulated in the contract. In terms of the date of the end of work, the specifications also state that the work is accepted provisionally if, in the opinion of the director (or an authorized representative), the work specified in the documents is ready for the use for which it was intended and that the value of the work to be completed is valued at under 0.5% of the total price of the contract.

These specifications also note that the contractor is accountable for all delays deemed unjustified by the director (or an authorized representative) and, in this case, the City is entitled to take all the measures necessary to protect its interests in this respect. A clause allows for the extension of the deadline in the event that, before or during the work, unforeseen circumstances arise that may cause delays. In this case, the contractor is bound to advise the director (or an authorized representative) immediately so that the latter can extend the deadline for the end of work, if this is deemed appropriate. Failing this, the contractor must pay a penalty to the City for every day there is a delay.

For the contracts granted by the borough councils, the execution of the work was scheduled to take place between the months of May and October 2003, and the stipulated time frames in the quotation sheets varied between 25 and 45 days, with the exception of one 150-day time frame for the planing contract, in the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est; they varied between 45 and 150 days in Mercier–Hochelaga-Maisonneuve.

We ascertained that, for all the files examined, a written notice to begin the work had been sent to the contractors. Also, in each of these cases, a document stipulating the date of the provisional acceptance of the work had also been issued. In order to ensure that the stipulated time frames had been tracked according to the existing monitoring mechanisms, we compared the time frame set out in the quotation sheet with the amount of time the work actually took, as indicated in the work supervision file.

Our audit shows that in Mercier–Hochelaga-Maisonneuve the work was carried out within the specified time frames.

In Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est, our audit shows that the minor sidewalk repair work, hot milling work and planing work were not all delivered on time. As concerns the pulverization-stabilization contract and the pavement rehabilitation contract, we observed that, in the first case, there was a six-day delay in the stipulated 30-day time frame and, in the second case, there

was a 27-day delay in the stipulated 45-day time frame. In the case of these two contracts, the contractors did not request an extension before or during the course of the project. When it came time to make the final payment for these two projects, no penalty was imposed by the Ville de Montréal. The contractors gave their reasons for the delay and the head engineer accepted the explanations provided.

Although we do not question the reasons supplied by the contractors, we believe that they should have nevertheless been examined in order to identify the corrective measures to be applied to the process. The results of such an analysis should also be conveyed to those responsible for project planning, so that, if necessary, the approach to establishing time frames for similar types of contracts can be revised accordingly.

In a context where the boroughs of the former City of Montréal will have new urban engineering resources to enable them to exercise their responsibilities with respect to the 2005 RRP, the boroughs will have to adequately track how well projects adhere to the established schedules. To accomplish this, they will have to establish realistic deadlines that take into account the scope of the work. They will have to provide contractors with formal notices authorizing the beginning of work or an extension to the deadline. Furthermore, they will have to introduce a monitoring mechanism that tracks how well deadlines are observed.

We feel that satisfactory monitoring of project time frames is important in order to provide the borough with the means to act should a contractor not perform the required work within a reasonable time frame. This aspect is even more important considering that in coming years the Ville de Montréal wishes to step up its investments in infrastructure, which will have an impact on the number of contracts to be granted. Consequently, it is foreseeable that contractors will have more work sites to co-ordinate and may, as a result, have greater difficulty respecting their schedules.

## **Recommendations**

**We recommend that the Division de l'ingénierie de la voirie of the SITE perform a periodic analysis of the reasons provided by contractors in the case of time overruns in order to carry out the required corrective measures. In addition, the results of this analysis should also be conveyed to those responsible for project planning, so that the approach to establishing time frames for similar kinds of work can be revised accordingly.**

***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“The time frames stipulated for the execution of work are an integral part of the tendering documents.*

*Any surpassing of a deadline must be discussed and authorized by the engineer in charge of the project, taking into account unforeseen and unforeseeable circumstances that may arise.*

*Based on experiences in 2004, in particular for the “pulverization-stabilization” and “rehabilitation” techniques, we will see to revising and adjusting the deadlines stipulated in the tendering documents with the project planning team, as soon as the 2005 specifications preparation process begins (for various contracts applicable to the arterial system).”*

**In order to be operational as soon as its 2005 RRP is implemented, we recommend that the Direction des travaux publics of the two boroughs audited make provisions for satisfactorily monitoring their project timelines. To do this, the boroughs will have to ensure that they set realistic schedules that take into account the scope of the work to be done. They will also have to issue formal notices to contractors to initiate the work or authorize an extension. Finally, they will have to see to the implementation of a monitoring mechanism that allows them to keep track of project time frames.**

***Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

*“This recommendation is one of the measures that the Division de l'ingénierie of the borough intends to adopt in its project management as of May 2005.”*

***Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve***

*“This responsibility has been assigned to the borough’s technical office. As of spring 2005, we will rigorously monitor the work schedules outlined in contract specifications and all the formal notices required will be forwarded to the contractors concerned.”*

### *Project timelines—Saint-Laurent*

The documents remitted to contractors as part of the public calls for tenders issued in 2003 stipulated that the time frame to carry out the project was 120 days, whether the contract involved sidewalk or pavement repair work. This same 120-day period was allotted in 2002, although there was nearly twice as much repair work of the same nature than there was in 2003.

These same documents make provisions for mechanisms designed to monitor these time frames. They specify that the contractor must begin the work immediately upon the written notice of the director, continue at it day after day and complete it within 120 days, failing which penalties would be imposed. Ultimately, if the borough finds that the contractor is neglecting its obligations under the contract, it may call in the personnel and equipment necessary to compensate for the lack.

In this respect, we observed that the time frames for pavement and sidewalk repair work were not monitored. No formal notice was given to contractors to begin work and there are no documents confirming the exact date of the end of the project.

According to the information obtained from the inspector responsible for overseeing the work, the 120-day time frame was respected for the pavement repair contract. However, in the case of the sidewalk repair contract, the schedule was exceeded by 54 days. Although, according to the information given us, the overrun was justifiable, no formal authorization was issued by the borough in order to allow this extension.

Although the time frames established did not take into account the scope of the work and no monitoring mechanisms were used, we must point out that the examination of complaints made to the borough do not show any dissatisfaction on the part of residents in relation to the excessive delay in the execution of this project.

However, we believe that this approach could eventually undermine the borough's right to take action against a contractor that does not execute repair work within a reasonable time frame. The risk that this situation occurs could increase in the coming years, given that the Ville de Montréal wishes to invest more in its infrastructure, which will have an impact on the number of contracts that are granted. Consequently, it is plausible that contractors may have greater difficulty in respecting their schedules in the event they have more contracts to fulfil.

## Recommendations

In order to ensure the satisfactory monitoring of project time frames, we recommend that the Division du soutien technique et de l'environnement:

- establish schedules that take into account the scope of the work to be done;
- provide contractors with formal notices that initiate the start of work or authorize an extension;
- introduce a mechanism to monitor project time frames. This mechanism will have to clearly identify the actual date work begins and ends, as well as the difference between the approved and actual time frames.

### *Actions proposed by the borough of Saint-Laurent*

*“Since May 2004, bids have indicated the date of the start of work as well as the target end date. Time frames are established on the basis of the scope of the project.*

*At the project start-up meeting, a schedule is set for each week and corresponding phase of work. The actual start date and stipulated end date for the work are set and indicated in the minutes of this meeting.*

*The work is overseen by the borough’s engineer and the consultant responsible for project supervision.*

*Every week, the contractor provides the list of work to be executed the following week.”*

### *Monitoring of quantities*

Monitoring must ensure that all work is performed according to specifications. This requires satisfactory follow-up throughout the duration of the project. This follow-up must make it possible to observe the level of progress made on a daily basis, to flag any situation that could stop or hinder the planned work and detect differences in terms of quantities.

In terms of monitoring quantities, progress and final estimates must be prepared in order to authorize payments to the contractor responsible for executing the work. These progress and final estimates represent the actual amount of work executed as of a given date, multiplied by the unit cost of the various items specified in the quotation sheet. These calculations, which make it possible to establish the actual quantities as of a given date, must be documented in order to be able to justify if the corresponding payment is proportional to the progress made in the project.

For the boroughs of the former Ville de Montréal that we audited, there were mechanisms in place that made it possible to monitor actual quantities. The specifications stipulate that once a month the contractor must produce, in the format required by the director (or an authorized representative) a report on the progress of the work, indicating the quantity and value of the work executed since the beginning of the contract. The director (or authorized representative) then checks this report and makes any necessary corrections.

During our audit, we observed that this provision in the specifications was not applied by the supervision unit. According to the information we obtained, the reception of a report on the progress of the project from the contractor must necessarily be checked and, as applicable, followed by discussions with the contractor, which, in the opinion of the Division's engineers, requires time that is not available during peak periods.

#### *Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est*

In the case of the two major road repair contracts, we observed that, during the preparation of the progress estimates, the on-site supervisor and the engineer responsible for the project had first established a level of progress for the work and used it to calculate estimated quantities. According to the information obtained, this kind of practice can be justified by the fact that day-to-day supervision is provided on the work sites as of the beginning of the project. Daily supervision reports are produced by the on-site supervisor and approved by the engineer responsible for the project on a weekly basis. Consequently, the on-site supervisor is able to attest to the estimated quantity of materials as of a given date.

However, we did observe that supervision files did not always provide proof that the appropriate measurements had been made during the preparation of the progress estimates or could not substantiate the level of progress in the work with supporting figures. They could not confirm the agreement of the on-site supervisor or the approval of the engineer responsible for the project. We believe that this situation does not make it possible to justify the work carried out to a third party and does not provide assurance that the payments made to the contractor represent the actual progress made on the work as of a given date. We nevertheless observed that the professional service contracts



concluded with consulting firms for supervision services require that all documentation necessary for the progress and final estimates be prepared.

In contrast, when the project is finalized, the supervision unit requests a final measurement of the area where the work was performed from the Division des plans et profils of the SITE. This is an important step, as the areas are measured on site and reconciled with those of the contractor and engineer in charge of the project and used in the preparation of the final estimate. In our opinion, this is a monitoring mechanism that provides a degree of assurance as to the calculation of the quantities of the project's main elements.

#### *Mercier–Hochelaga-Maisonneuve*

Of the four contracts granted, only the milling work was supervised in-house. For this work, we observed that the progress estimate was prepared using the quantities measured by the on-site supervisor. Work sites are supervised on a daily basis from the project onset. Daily supervision reports are produced by the on-site supervisor and approved weekly by the engineer in charge of the project. Accordingly, the on-site supervisor is able to attest to the estimated quantity of materials as of a given date. In this case, as the quantities involved are small, a final measurement is not made.

Concerning the sidewalk and curb reconstruction contract and the minor sidewalk repair contract in the borough of Mercier–Hochelaga-Maisonneuve and the minor sidewalk repair work in the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est, the supervision of which was performed in 2003 by an outside firm, we observed that the quantities established in the progress estimates also depended on the measurements made by the supervisor. At the moment of the final estimate, the quantities measured by the supervisor were reconciled with those of the contractor. According to the information obtained, the contracts whose work is supervised by outside firms are not submitted to the Division des plans et profils for official measurement.

Since nine minor sidewalk repair contracts of a total value of nearly \$2.5 million were granted in 2003 by the boroughs of the former Ville de Montréal, we feel that a periodic check of the measurements should

be carried out by a third party in order to ensure that the Ville de Montréal pays only for work that is actually executed. We also believe that this periodic check should be extended to the other work supervised by outside firms. This aspect is even more important considering that in the coming years the Ville de Montréal intends to invest more in infrastructure, which will have an impact on the number of contracts it will grant to engineering firms, especially in terms of on-site supervision.

Finally, given that each borough will assume full responsibility for the 2005 RRP, each must satisfactorily monitor the execution of the work in order to ensure it is carried out according to specifications. To do this, it will be necessary to ensure that the required daily supervision reports are produced. It will also be necessary to ensure that the quantities used in the progress and final estimates are supported by the appropriate measurements or calculations showing the figures established for each location.

### **Recommendations**

**We recommend that the Division de l'ingénierie de la voirie of the SITE keep records of the calculations of quantities established in the preparation of progress estimates in order to ensure there is sufficient supporting documentation for payments to contractors. These calculations should also be signed by the on-site supervisor and approved by the engineer in charge of the project in order to indicate that they agree with the estimated quantities.**

### ***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*"In the progress estimate stage, quantities are paid according to the percentage of progress made on the project, with a certain amount withheld to compensate for any shortfalls. Unforeseen circumstances, contingencies and claims are settled only at the end of the contract, except in the case of a force majeure.*

*In 2005, as soon as work starts, we will ask the engineers responsible for the supervision of the various contracts related to the arterial system to always ensure that the content of progress estimates is formulated appropriately and to sign them."*

**In addition, we recommend that the Division de l'ingénierie de la voirie of the SITE periodically check the final measurement of work for which supervision has been provided by an outside firm in order to ensure that the Ville de Montréal pays only for work that has actually been performed.**

***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“In 2005, we will ensure that the final measurement of the work for which supervision has been provided by an outside firm is carried out periodically, in order to ensure that the Ville de Montréal pays only for work that has actually been performed.”*

**Finally, in order to be operational as soon as the 2005 RRP is implemented, we recommend that the Direction des travaux publics for each borough make provision for satisfactorily monitoring the execution of work. To do this, the borough will have to ensure that daily supervision reports are produced. The borough will also have to ensure that the quantities that appear in the progress and final estimates are supported by the appropriate measurements or calculations showing the estimates established by location.**

***Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

*“This recommendation is one of the measures that the Division de l'ingénierie of the borough intends to implement in its work supervision activities as of May 2005.”*

***Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve***

*“As of the summer of 2005, the borough engineer will be responsible for monitoring project execution. The measurement of the work executed will be carried out by technical agents reporting to the engineer.”*

*Provisional acceptance of work*

*Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est and Mercier–Hochelaga-Maisonneuve*

According to specifications, when a project has been completed to a substantial degree, the supervising engineer checks the work, accompanied by a representative of the contractor. A “Provisional Acceptance of Work” report is then prepared to provide a list of the work to be corrected, redone or completed. After the provisional acceptance of work has been issued and the contractor has corrected

the deficiencies, the contractor must prepare an invoicing report in order to be able to produce the final estimate. Final acceptance of the work will be issued two years after the provisional acceptance, that is, at the moment the warranty period provided for in the specifications expires.

In order for the provisional acceptance of the work to be issued, the engineer in charge of the project must be able to certify that the work has been carried out in compliance with the project specifications, because this marks the beginning of the warranty period. Consequently, this opinion depends on the inspection work performed by the on-site supervisor and the checks done by the supervising engineer.

Following the examination of the supervision files, our audit shows that, in the cases where the supervision was carried out by an outside firm, the engineers in charge of the project were in a position to produce, when the provisional acceptance was issued, an opinion on the compliance of the work to the specifications. However, in the case where the contracts were supervised in-house, the engineer in charge of the project mentioned in the provisional acceptance document that he had checked the contract in the company of the supervisor, and confirmed that the work was completed to a substantial degree and reported on what work remained to be done. As a result, an opinion on the compliance of the work to the specifications was not issued as part of this provisional acceptance of the work, nor at any other moment prior to final payment. The result of a situation of this nature is that none of the representatives of the Ville de Montréal takes a position on whether or not the work complies with specifications. We believe that all necessary efforts should be made in order to issue an opinion on the compliance of the work to the specifications following the execution of the project, when the provisional acceptance is issued.

Furthermore, during our examination of the supervision files related to contracts granted in 2003, we observed that the provisional acceptance of work was not always carried out in the presence of a representative of the boroughs. As long as the work is supervised by the Division de l'ingénierie de la voirie, we believe that a representative of the borough should be present when the provisional acceptance of work is issued in order to ensure that they meet the borough's requirements. Finally, when the borough fully assumes its responsibilities with respect to the 2005 RRP, we believe that it should also produce an opinion, when the provisional acceptance of work is issued, on the compliance of the work with specifications.

## **Recommendations**

**We recommend that the Division de l'ingénierie de la voirie of the SITE issue an opinion in order to confirm that all the work performed complies with specifications and to assume accountability for the work. Moreover, such an opinion should also be issued by the boroughs, when they fully assume their responsibilities with respect to the RRP.**

### ***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“When the first contracts granted in 2005 come to end, between June 2005 and December 2005, we will ask the engineer responsible for monitoring the work on the arterial system to include a note in the existing form entitled “Provisional Acceptance” 06.03.407-1, to the effect that the work executed complies with the appropriate specifications.”*

**As long as project supervision is performed by the Division de l'ingénierie de la voirie, we recommend that a representative of the Direction des travaux publics of the borough be present when the provisional acceptance of work is issued in order to ensure that all work complies with the borough's requirements.**

### ***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“Starting in January 2005, the boroughs will be fully responsible for the local RRP, including the supervision of work and the provisional acceptance of work. They will therefore be able to ensure that the work performed meets their requirements.*

*This decision refers to the decentralization of all the activities related to the local RRP to the boroughs.”*

### ***Saint-Laurent***

A progress certificate must be prepared in order to authorize payment following a request submitted by the contractor responsible for the execution of work. This payment represents the actual amount of work executed, as of a given date, multiplied by the unit rates of the various items stipulated in the specifications, less the stipulated amount withheld as a performance bond.

Once the work is fully completed and inspected, in the presence of a representative of the contractor, the “Provisional Acceptance of Work” document must be prepared. The final acceptance of the work will be granted one year after the provisional acceptance, i.e., at the moment the warranty period outlined in the specifications expires.

The final progress certificate must authorize the payment for the actual amount of work executed, whereas the provisional acceptance must certify that the work has been carried out in compliance with specifications. Consequently, the separation of the duties and controls exercised throughout the process must give the engineer responsible for supervision reasonable assurance that the information found in the documents is accurate.

However, our audit led us to the realization that the calculation of the actual amount of work executed, as well as the compliance of the work with the specifications, depends almost exclusively on the work of the inspector, failing adequate monitoring by the engineer. This approach leads to an increase in the risk of error or manipulation in the actual quantities executed, as well as makes such deficiencies difficult to detect. Similarly, this increases the risk that non-compliant work will slip by the attention of authorities.

As mentioned earlier, the inspector performs all inspections, both during the execution of the project and upon completion of the work, without issuing any reports in this respect. The inspector also plans and monitors laboratory testing and analyses the reports that relate the findings. The engineer does not receive copies of these reports.

We must also add that, during the inspection process, the inspector evaluates the degree of progress made on the project. In the course of this evaluation, the inspector measures the amount of work executed, with or without the presence of a representative of the contractor. He submits this information to the engineer in charge of supervising the work, who prepares the progress certificate. Once the work has been fully completed, the inspector carries out the final inspection, with or without the presence of a representative of the contractor, and verbally informs the engineer that the work has been completed.

During the course of our audit of the two main pavement and sidewalk repair contracts, we observed that the engineer in charge of the project referred to the work of the inspector when preparing progress certificates and provisional acceptance of work.

The measurements of quantities taken by the inspector were submitted to the engineer in charge of supervising the work in the form of unsigned, handwritten notes. For many of the progress certificates prepared, these handwritten notes were not kept on file. As a result, in these cases there are no documents attesting to the quantities measured on site by the inspector to support the quantities that appear on the progress certificates, which were used to pay the contractors.

In the single case where the provisional acceptance had been issued at the end of our audit (pavement repair), the handwritten notes in which the final measurements taken by the inspector appear were not kept on file.

In addition, the engineer responsible for supervising the work confirmed that he had not directly checked the measurements taken by the inspector during or at the end of the project. It would seem that these measurements were compared only once with the quantities estimated by the inspector before the launch of the call for tenders. However, despite this comparison, we were not able to obtain explanations in respect to the significant variances found in certain elements in the pavement contract. In these cases, the estimated quantities were roughly 12% higher than the quantities measured at the end of the project.

For the third contract examined, namely the one related to repairs on small areas of pavement on various streets and service roads, the gaps observed were even wider. In fact, despite requests for payment to the contractor for a total amount of \$312,000, there was no document kept on file confirming the locations where the work was carried out, as mentioned previously.

As far as the quantities measured by the inspector are concerned, we tracked down a handwritten document stating these quantities, but only for the first of the two progress certificates issued. The quantities that appear in the handwritten document are general and do not always refer to the specific locations where the work was executed.

According to the inspector and the information that appears in the last progress certificate, the work executed under this contract was completed on September 1, 2003. However, as of March 2004, the provisional acceptance of the work had still not been issued. This delay was caused by a significant variance between the work invoiced by the contractor and the work measured by the inspector. Contrary to the first two contracts examined, the contractor presented invoices to the borough totalling roughly \$407,000, while for the two progress certificates issued, the work represented an amount of \$312,000. By the time our audit was completed, a meeting with the contractor had still not taken place to explain this variance.

## Recommendations

In order to reduce the risk of error or manipulation of the quantities related to the work executed and to make the engineer in charge of supervising the work more accountable with respect to the compliance of the project to specifications, we recommend that the Direction des travaux publics ensure that:

- the tasks executed by the inspector responsible for supervising the project be reviewed in order to ensure an adequate division of duties between that inspector and the engineer responsible for supervising the work;
- documents that are signed and kept on file specify the quantities of work measured by location;
- the final inspection of work be carried out by the engineer responsible for its supervision, in the presence of a representative of the contractor. Following this, a written confirmation attesting to the contractor's acceptance of final payment must be requested;
- the provisional acceptance of the work signed by the engineer responsible for its supervision contain a note specifying that the work was executed in compliance with specifications.

### ***Actions proposed by the borough of Saint-Laurent***

*"Since the beginning of work under the 2004 RRP, there has been a division of duties between the borough inspector, the consultant in charge of supervising the work and the borough's engineer. Reports clearly identify the work measured by location and a correlation is made with the progress certificate prepared by the consultant. The division head and borough engineer check and sign the progress certificate before submitting it to the borough director.*

*Recommendations as to the final inspection of work and provisional acceptance will be implemented when the 2004 projects have reached this stage (fall 2004).*

*Also, the contractor must sign a final payment agreement before receiving payment upon the provisional acceptance of work (fall 2004)."*



### *Quality control*

A quality control program exists to support the supervision program in order to ensure that work is carried out in compliance with specifications. It involves three types of approaches: quality control prior to the execution of the work, in order to assess the existing foundations and confirm the nature of the work to be carried out, then subsequent quality control during the execution of the work that focusses mainly on the quality of the materials and their installation and, finally, quality control at the end of the project to confirm the quality of the work. This quality control program must stipulate the methodology used to carry out these various controls.

### *Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est and Mercier–Hochelaga-Maisonneuve*

During the course of our audit, we ascertained that the Division de l'ingénierie de la voirie of the SITE had entrusted quality control in 2003 to the laboratory of the Ville de Montréal. Following the examination of the supervision files, we observed that a representative of the laboratory had been present at certain stages of project execution, notably when the concrete was poured and the asphalt laid down. The purpose of this was primarily to ensure the quality of the materials and their installation. We also observed that the reports on the findings obtained from core tests carried out at the end of the project had been prepared and sent to the engineer responsible for supervising the work for the purpose of analysis.

In addition, in order to analyse the results obtained, specifications currently stipulate the criteria for the acceptance or refusal of work. In this respect, a number of tests are established on the basis of whether the work involves pavement or sidewalks, as well as on the extent of the area involved. According to the information obtained, a new set of specifications, prepared by the Direction du contentieux, is in the process of being approved by the Comité exécutif. These new specifications do not include specific provisions with respect to criteria for accepting or refusing work.

Given the boroughs will become entirely independent for the purposes of the RRP, they will have to include a quality control program in their three-year capital works budget. This program will focus mainly on the nature of the work, the number of tests to be conducted and the criteria for accepting or refusing work. We believe that the adherence to such a program is important, because it will enable the engineer in charge of the project to evaluate the quality of the supervision practised.

## **Recommendation**

**In order to be operational as soon as urban engineering resources are transferred, we recommend that the Direction des travaux publics of each borough approve a quality control program in order to enable those in charge of supervision to ensure that work is carried out in compliance with specifications.**

### ***Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

*“This recommendation is one of the measures that the Division de l’ingénierie of the borough intends to implement in its project supervision practices, starting in May 2005.”*

### ***Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve***

*“Starting in the summer of 2005, quality control will be under the responsibility of the Division de l’ingénierie. It will be assigned by way of a mandate to the Ville de Montréal’s laboratory or a private laboratory, in compliance with specifications.”*

### ***Saint-Laurent***

During our audit, we observed that the inspector is the one who determined the nature and number of laboratory tests to carry out, based on his experience and the allotted budget. Following this, during the execution of the work, we ascertained differences between the number and nature of the tests anticipated and those that actually were carried out. The inspector is the one who, based on his experience and the progress of the project, decided to change the original choices.

In this regard, we must point out that there is no formal approval process on the part of the engineer responsible for supervising the work, either in terms of the quality control program or the modifications made to it as the work is executed.

We also observed that once monitoring is under way, the inspector is the only one to receive, analyse and keep the reports on the resulting findings. In terms of storing these reports, roughly 20% of those that were billed were not kept on file.

Moreover, we should point out that the quality control program should serve to support the inspection program, which is intended to ensure that work is carried out in compliance with specifications. In this respect, daily inspections must be conducted and be covered by formal reports. These reports must contain such details as the status of the work (for example, excavation, base course or top layer of pavement, pouring of concrete), the location where the work is taking place, the equipment and personnel on site, the activities of laboratory personnel, weather conditions, the problems encountered and so forth. They must be signed and sent to the engineer in charge of supervising the work, who is responsible for analysing and approving them, as well as keeping them on file.

Our audit revealed that no daily inspection reports were produced for any of the contracts granted under the RRP (\$2.7 million). Only personal notes were written in the agenda of the inspector who carried out the inspections on the work covered by these contracts. These notes, however, were insufficient in terms of conveying the information that generally appears in inspection reports.

The absence of a daily inspection report and the lack of analysis of quality control reports' findings make it difficult for the engineer responsible for the supervision of work to evaluate the quality of the supervision exercised throughout the RRP program.

## **Recommendations**

**In order to exercise a satisfactory level of supervision to ensure that work is executed in compliance with specifications, the Division du soutien technique et de l'environnement should see to it that an engineer responsible for supervising the work:**

- **approves the quality control program and any modifications concerning it;**
- **receives, analyses and stores the reports outlining the results obtained during checks and laboratory tests;**
- **approves and keeps the daily inspection reports produced by inspectors.**

## ***Actions proposed by the borough of Saint-Laurent***

*“Since May 2004, the quality control program has been defined during the meeting preceding the call for tenders; a program is proposed by the laboratory hired by the borough and is approved by the borough's engineer. Any change to the program is also approved by this engineer. When a problem occurs, the division head also becomes involved.*”

*Formal reports relating the results are given to the consultant, who analyses and approves them and remits them to the borough engineer for inclusion in the project file.*

*Upon each visit to the site, the borough's inspector completes an inspection report, which is kept on file."*

#### *Minimum level of project supervision—Saint-Laurent*

The required level of supervision must take into account the extent and complexity of the work. However, there are no specific standards to which the borough must adhere. Consequently, we proceeded with certain comparisons in order to evaluate if this level of supervision seemed sufficient with respect to the pavement and sidewalk repair work to be performed.

As far as the checks carried out by laboratory personnel are concerned, the borough deals with specialized firms. In 2003, a \$20,000 budget was set aside for this purpose. This amount corresponds to 0.8% of the value of the contracts granted under the RRP. Both the inspector and head engineer of the Division du soutien technique et de l'environnement believe that this amount is not enough to ensure an adequate level of quality control.

In this respect, a comparison of the resources invested in this type of monitoring made us realize that the borough invested about half as much as other boroughs and municipalities in the vicinity. The boroughs of the former Ville de Montréal invest 1.5% of the total contract value. In the case of the cities of Laval and Longueuil, close to 2% and 1.5%, respectively, is devoted to quality control for contracts of similar magnitude.

By conducting other analyses within the borough, we observed that the amounts invested in quality control can vary widely. As a result, as part of the RRP work in 2002, the resources invested were 0.65% of the amounts set aside in the contracts granted, whereas, for the other infrastructure contracts carried out in 2003, the borough invested nearly 1.6% in quality control.

As concerns inspection, given the lack of available data, we were not able to compare the resources invested in this aspect with those invested by other boroughs and municipalities in the vicinity. However, according to the information obtained, regardless of the extent of the work carried out under the RRP, the borough has relied on the services of a single inspector for several years. Consequently, the level of inspection is not adjusted according to the magnitude of the work. As an example, the same inspector supervised pavement and sidewalk repairs of a value of \$6 million in 2002 and \$2.7 million in 2003.

Therefore, we believe that a policy defining the minimum level of supervision to be carried out must be established. This should specify a minimum level for both inspection and quality control of materials and their installation. As it is in charge of project supervision, the Division du soutien technique et de l'environnement could carry out the analyses necessary to develop this policy. To this end, the borough could work with other boroughs to define this policy.

### **Recommendation**

**In order to ensure that there is sufficient quality control over the work performed under the RRP, taking into consideration the extent of the work, the borough should adopt a policy establishing the minimum level of supervision to be applied. This should make it possible to define the scope of the resources to be invested, both in terms of inspection and the quality control of materials and their installation.**

### ***Actions proposed by the borough of Saint-Laurent***

*“As part of the 2004 RRP, in order to ensure adequate project supervision, the borough hired a consultant and a laboratory. The consultant supervised the work for the same number of hours as the site was operational (one supervisor per site), which represents roughly 2% of the cost of the work. This consultant reports to the borough inspector and the supervising engineer.*

*As for quality control for the materials, 1.5% of the amount of the contracts is invested.*

*The policy will be written by the head of the Division de l'administration des travaux publics, with the co-operation of the head of the Divison du soutien technique et environnement."*

#### *Monitoring of contract costs*

Cost monitoring must make it possible to ensure that work is carried out as planned without exceeding the spending levels authorized by the borough council. In addition, it should make it possible to obtain reliable information on the actual cost of the work, according to its level of progress.

In the boroughs of the former Ville de Montréal, following the granting of contracts by the borough council, the Direction du transport de la voirie of the SITE records the commitments related to the spending authorized by the council in an infrastructure work management system. These commitments concern the cost of the contract for the amount specified in the bid, as well as incidental expenses (for example, quality control, testing, utility expenses, and so on).

In regard to the contracts examined in the two boroughs of the former Ville de Montréal, responsibility for tracking costs was undertaken by the supervision unit. We ascertained that the actual cost of the work carried out did not exceed the spending level authorized by the borough council, except in the case of the planing work in the borough of Mercier–Hochelaga-Maisonneuve.

In this case, we saw that additional work had been carried out in October 2003 and, in this respect, a \$23,000 overrun was incurred for a \$169,500 contract. Consequently, the Direction des travaux publics of the borough was required to have the borough council approve additional funds. Our audit showed, however, that the authorization was submitted to the borough council after the work was carried out. We believe that a procedure of this nature should have been undertaken before the work was carried out.

Moreover, our audit revealed discrepancies with respect to contingency work and the provisional acceptance of work in the two boroughs and the monitoring of incidental expenses in the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est.

As part of our mandate, we examined the preparation of the final estimates. We observed that certain quantities indicated in the quotation sheet had been exceeded whereas others had not been used at all.

In terms of the overruns, they are classified under contingency work. In this respect, the specifications provide for contingency amounts for the precise purpose of defraying the cost of work for which the quantities to be carried out exceed those stipulated in the tendering documents, as well as the cost of work that is not covered by the bid but that is requested in writing by the director (or an authorized representative).

As concerns the quantities for which there was an overrun, we observed that, during the course of this work, they were not taken into account in the actual quantities indicated in the progress estimates. The overruns were instead recorded when the final estimate was prepared, in the form of a requisition for contingency or additional work. In our opinion, this approach does not allow for the rigorous monitoring of costs throughout the project. It also represents a risk that the contractor may submit additional costs that may cause an overrun.

*Mercier-Hochelaga-Maisonneuve*

For the four contracts granted, the cost of the contingency work specified in the quotation sheet was exceeded. Although the work was carried out within the contracts' overall budget, we believe that an analysis of the main causes of the variances observed in terms of contingency work (overrun in quantities and additional work) should be carried out in order to enable project planners to review how quantities are established for similar work. As an indication, the following table shows the extent of the cost of contingency work, as compared to the contracts granted:

<b>Nature of work</b>	<b>Cost of contract granted</b>	<b>Anticipated cost of contingency work (% of cost of contract granted)</b>	<b>Actual cost of contingency work (% of cost of contract granted)</b>
Construction/reconstruction of sidewalks and curbs	\$647,130	\$64,000 (10%)	\$114,194 (17%)
Minor sidewalk repairs	\$399,980	\$36,000 (9%)	\$73,438 (18%)
Planing of pavement	\$169,500	\$14,000 (8%)	\$16,115 (10%)
Hot milling	\$144,110	\$11,000 (8%)	\$32,052 (22%)

For three contracts out of five, the cost of the contingency work specified in the quotation sheet was exceeded. Although the work was carried out within the contracts' overall budget, we believe that an analysis of the major causes of the variances observed in terms of contingency work (overrun in quantities and additional work) should be conducted in order to enable project planners to review how quantities are established for similar work. As an example, in the case of the minor sidewalk repairs, the actual cost of the contingency work was \$22,600, compared to an anticipated total of \$9,000. In the case of the sidewalk pulverization-stabilization work, the actual cost of the contingency work was \$10,641, compared to an anticipated total of \$5,000. Finally, in the case of pavement rehabilitation work, the actual cost of the contingency work was \$32,027, compared to an anticipated total of \$25,000.

With respect to the use of committed funds, we observed that the unused amounts resulting from contracts granted in 2003, whose work was completed and for which a final estimate had been issued, were still available. As long as these commitments are not closed down, the borough cannot use the available funds for other purposes. In addition, we noted that nearly \$100,000 was still available in sub-projects for which work was performed in 2001 and 2002. In our opinion, a rigorous follow-up should be carried out on the amounts that are no longer required in order to make them available for other priorities.

It is important to point out that as of the date of provisional acceptance, the specified work must be ready for the use for which it was intended and the value of the work to be completed must be under 0.5% of the total price of the contract. As the requests for contingency work are approved and recorded after the provisional acceptance of work, we were not able to obtain for the two boroughs of the former Ville de Montréal the assurance that the cost of the work to be completed was 0.5% of the total price of the contract as of the date of provisional acceptance. Given that this date has an impact on the calculation of the work completion time frame and the date of the beginning of the warranty period, we believe that the rigorous monitoring of costs would make it possible to confirm this date.

Finally, in the context where the boroughs will be fully assuming their responsibilities with respect to the 2005 RRP, they will each have to be rigorous in monitoring their costs. To do this, they will have to have access to reliable information throughout the progress of the work.



## **Recommendations**

**We recommend that the Division de l'ingénierie de la voirie of the SITE monitor costs rigorously during the execution of the project in order to have reliable information on the actual cost of work, according to the level of its progress. This should include, whenever possible, the cost of contingency work at the moment it is carried out.**

### ***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“A rigorous and accurate cost monitoring process, including the cost of contingency work at the moment it is executed, is directly related to the number of resources available to provide full-time supervision on each of the work sites.*

*Given the large number of contracts, we must prioritize the “end of work” aspect to carry out the final measurements and reconcile the information with that of the contractor.*

*In 2005, in the cases where we will be able to assign full-time resources to supervise the work on a given project, we will exercise a rigorous follow-up on the level of progress, on the basis of the actual cost.”*

**In addition, we recommend that the Division de l'ingénierie de la voirie of the SITE perform an analysis of the causes of the major variances in terms of additional quantities and work in order to make it possible for project planners to revise, as required, how quantities are set for similar projects.**

### ***Actions proposed by the Service des infrastructures, du transport et de l'environnement***

*“Based on our experiences in 2004, for each of the various techniques, we will ask the supervising engineer(s) to check the major variances in additional quantity and work once they begin to prepare the calls for tenders in 2005, so that they can adjust their projections accordingly.”*

**Furthermore, we recommend that the Division de l'ingénierie de la voirie of the SITE rigorously monitor the use of incidental expenses and the available balances in completed contracts in order to undertake the necessary measures to use these amounts for other purposes.**

**Actions proposed by the Service des infrastructures, du transport et de l'environnement**

*“In 2005, the monitoring of incidental expenses and the use of available balances for each of the new contracts granted under the local RRP will be the responsibility of the borough.*

*As for the arterial system, the use of incidental expenses in the various projects is subject to authorization by the engineer responsible for the project via the form entitled “Request for the Execution of Work.” In addition, before being able to envisage the use of available balances from various contracts for other purposes, the engineer responsible for the project must ensure that the quantities have been reconciled with the contractor and that final payment for the contingencies and claims has been made.*

*Special attention will be paid in 2005 to the available balances once this stage is completed.”*

**In order to be operational once the resources have been transferred, we recommend that the Direction des travaux publics for each borough plan to rigorously monitor the costs related to its road repair program.**

**Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est**

*“This recommendation is one of the measures that the Division Ingénierie of the borough intends to implement in its monitoring of work budgets.” (Planned completion: May 2005)*

**Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve**

*“Starting in the summer of 2005, the technical office will assume this responsibility. Our objective is to respect the budgets allotted to each contract. If there are any cost overruns generated by unforeseen circumstances, we will go back to the borough council.”*

**Finally, if there are overruns in contract costs, we recommend that the Direction des travaux publics of each borough have the borough council approve additional funds before the work is carried out.**

### **Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve**

*“In the event of a cost overrun in a contract, we prepare a complete report and a decision summary indicating the causes of the variances in quantity or additional work, for approval by the borough council. We will continue to do so in 2005.”*

### **Follow-up on the three-year capital works budget, respect of funds and the capitalization policy**

The responsibility for monitoring these sums in order to avoid any overruns falls to the borough, in particular to the Direction des services administratifs.

However, the computer systems housing the data related to the three-year capital works budget (STRIC and INVESTI) are run by the Service des finances. The Service des finances also issues the treasurer’s certificates that make it possible to ensure that the necessary amounts are available and set aside for the borrowing by-law.

As a result, given the responsibility of the borough, a budgetary directive stipulates that the issuance of these certificates must be preceded by a declaration on the part of the Direction des services administratifs specifying, among other things, that:

- the budgetary charge does not generate any overruns in the budget and respects the annual allocation approved by the Conseil municipal for the borough’s three-year capital works budget;
- the budgetary forecasts were modified accordingly in the INVESTI system when the budgetary charge necessitated it;
- the capitalization policy approved by the Conseil municipal has been respected.

Currently, when budget transfers are required by the boroughs, only the Service des finances can input these transfers in the INVESTI system. In order to keep the supporting documents for these transfers, the Service des finances issued a memo to the effect that the boroughs must transmit their requests for transfers by e-mail, along with the decision identification numbers appearing in the GDD decision summary management system.

It is anticipated that in 2004, the boroughs of the former Ville de Montréal that underwent the present audit will be able to issue their treasurer's certificates themselves.

In addition, it is planned that the borough of Saint-Laurent will be able to record its budget transfers in the INVESTI system itself starting in July 2004 and that it will be able to issue its own treasurer's certificates as of early 2005.

Follow-up on the three-year capital works budget and respect of funds committed when contracts are granted

During the course of our work, we ascertained that, overall, the three boroughs respected the budget set aside in the three-year capital works budget for the RRP project. However, our audit also revealed the following weaknesses related to the process used to monitor the three-year capital works budget.

The boroughs do not have the tools necessary to easily track their capital budget because it requires extracting data from two computer systems run by the Service des finances to be able to conduct the analysis.

The STRIC system processes the accounting information that contains the data related to the funds committed with respect to the borrowing by-laws when the contracts are granted. It also contains the expenses registered at the moment payment is issued for progress certificates produced by the boroughs. As for the INVESTI system, it contains the original budget, the modified budget resulting from transfers, and the expenses related to the various projects for which the data is taken from the STRIC system. However, the data related to the committed funds does not appear in the INVESTI system, which cannot provide the user with the balance of the capital budget that is actually available without consulting the data contained in the STRIC system.

Consequently, the Service des finances developed reports using data from both the INVESTI and STRIC systems that enable the boroughs to access the available budget balance, i.e., the modified budget less expenses and commitments. These reports were made available via the Intranet site of the Ville de Montréal in late April 2004.

However, the Direction des services administratifs of the borough of Saint-Laurent does not always request authorizations or transfers required in relation to projects that are part of the three-year capital works budget. Accordingly, we were not able to locate the authorization of the borough council for the \$238,000 budget transfer from a pavement repair sub-project to another capital project. Moreover, in the sub-project related to sidewalk repairs, a transfer of roughly \$15,000 would have been necessary to cover all the funds required for the additional work performed on the four streets added to the initial contract. However, this transfer was not processed. Furthermore, according to an analysis and

variances between the modified three-year capital works budget and the actual expenses as of December 31, 2003, there would have been a few other projects where the borough would have had to initiate budget transfers to cover all the expenses related to these projects.

Finally, as for the respect of the funds committed as part of the three contracts examined, we observed at the end of our audit that the expenses incurred fell short of these funds. As for the pavement repair contract for small areas on various streets and service roads, although the contractor presented invoices totalling nearly \$100,000 more than the amount that appeared on the final progress certificate, the head of the Division soutien technique et environnement estimates that the costs invoiced were overestimated and that the borough is not obligated to pay this amount.

### **Recommendation**

**In order to ensure the priorities of the borough council are respected and to improve the monitoring of the capital budget, the Direction des services administratifs of the borough of Saint-Laurent should, after obtaining the corresponding authorizations from the borough council, carry out all the budget transfers required.**

### ***Actions proposed by the borough of Saint-Laurent***

*“Since June 2004, the accountant responsible for the accounting related to the three-year capital works budget has been carrying out the fund transfers between the various sub-projects only when she has on hand the decision files that have been duly approved by the borough council.”*

### Respect of the capitalization policy

In June 2002, the Conseil municipal adopted a capitalization policy designed to identify and record capital expenditures, as well as their amortization, according to pre-established criteria. This policy is also intended to enable the standardization of accounting practices throughout the Ville de Montréal.

This policy defines various elements, including capital expenditures, the cost of a capital expense, useful life span and amortization expenses. It also establishes the monetary threshold for capitalization, accounting criteria for capital expenditures and the amortization method.

It is the responsibility of each of the boroughs to ensure that this policy is respected. Accordingly, given the numerous stakeholders involved, the policy must be sufficiently precise to ensure it can be applied uniformly throughout the territory.

During the course of our audit, we observed that certain expenses that should not have been capitalized were and, conversely, that certain expenses that should have been capitalized were not. For other expenses, the capitalization policy was not sufficiently precise to establish whether the expenses were capitalizable or not.

The following tables summarize our findings regarding the expenses that were capitalized:

*Saint-Laurent*

<b>Contracts</b>	<b>Expenses capitalized in 2003</b>	<b>Capitalizable portion according to the capitalization policy</b>	<b>Non-capitalizable portion according to the capitalization policy (estimated)</b>	<b>Portion whose capitalization is uncertain, based on the capitalization policy (estimated)</b>
Pavement repair (industrial and residential RRP)	\$1,357,224	\$1,357,224 <b>(note 1)</b>	-----	-----
Sidewalk repair (RRP)	\$989,102	\$989,102 <b>(note 2)</b>	-----	-----
Excavation and repair of pavement (various streets and service roads)	\$302,008	-----	\$186,000 <b>(note 3)</b>	\$116,008 <b>(note 4)</b>
<b>Total (%)</b>	<b>\$2,648,334 (100%)</b>	<b>\$2,346,326 (88.6%)</b>	<b>\$186,000 (7%)</b>	<b>\$116,008 (4.4%)</b>

**Note 1:** This involves major pavement repairs to street sections (pulverization and two layers of asphalt).

**Note 2:** This involves the reconstruction of sidewalks for portions of street sections.

**Note 3:** This involves repair work (removal and reinstallation of two layers of asphalt to the base course) over small surfaces measuring 150 m<sup>2</sup> on average (patch).

**Note 4:** This involves cold planing work, carried out on service roads and surfaces with an average area of 1,000 m<sup>2</sup>. Although the value of the work largely exceeds \$10,000, we cannot determine from the capitalization policy if it consists of work that, by its nature, extends the useful life of the surface and if the size of the area involved justifies the capitalization.

In addition, expenses related to project monitoring (inspection and laboratory testing), representing approximately \$70,000, were not capitalized, although the capitalization policy clearly establishes that they should have been.

*Mercier–Hochelaga-Maisonneuve*

Nature of work	Expenses capitalized in 2003	Capitalizable portion according to the capitalization policy	Non-capitalizable portion according to the capitalization policy (estimated)	Portion whose capitalization is uncertain, based on the capitalization policy
Construction and reconstruction of sidewalks and curbs	\$647,130	\$647,130 (note 1)		
Minor sidewalk repairs	\$399,980			\$399,980 (note 2)
Planing of pavement	\$169,500			\$169,500 (note 3)
Hot milling	\$144,110		\$144,110 (note 4)	
Total of contracts granted	\$1,360,720 (100%)	\$647,130 (42%)	\$144,110 (11%)	\$569,480 (47%)
<b><u>In-house work</u></b> Laying of asphalt and corresponding work	\$990,545			\$990,545 (note 5)

**Note 1:** This involves major repair work to sidewalks in compliance with plans and specifications produced by the Division de l'ingénierie urbaine. The work involved 12 streets, eight of which were greater than 200 m<sup>2</sup> in area.

**Note 2:** The work is carried out on different streets and the area of each of the sidewalk sections was not very large. As a result, according to the contract, the work was limited to a total area of 1,750 m<sup>2</sup>. The borough had anticipated work on 36 streets and in 127 specific locations. The majority of these sections were smaller than 20 m<sup>2</sup>.

**Note 3:** This work involved removing the asphalt blend from the pavement, either in whole or in part, and then installing a new surface (the work was carried out by blue-collar employees).

This involved major corrective maintenance work applicable to a pavement that was in bad condition and that was deteriorating at an accelerated pace. The work involved reconditioning the pavement to good or excellent condition (making it possible for the surface course to be reconstituted). However, considering the structure's more advanced state of deterioration, a pavement treated in this way will generally deteriorate at a faster pace than when the structure is in good condition.

We cannot determine from the capitalization policy if this constitutes work that extends the useful life of the structure.

**Note 4:** This work consists of spot repairs of the asphalt surface of the pavement via hot milling techniques over the entire territory of the borough, especially where old excavations have deteriorated and in locations where the planing is in poor condition. According to the nature of the work carried out, these can be considered more as an operating expense.

**Note 5:** The execution of this work by Ville de Montréal blue-collar employees is carried out after the planing work is performed by a contractor. The capitalized costs involve the cost of the materials and the equipment rental. In this case, the activities of the blue-collar employees focussed on the same streets as those that were covered by the planing contract. The capitalization of the planing work was uncertain (see note 3). The related paving work is therefore just as uncertain.

*Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est*

Nature of work	Expenses capitalized in 2003	Capitalizable portion according to the capitalization policy	Non-capitalizable portion according to the capitalization policy (estimated)	Portion whose capitalization is uncertain, based on the capitalization policy
<b><u>Contracts granted</u></b>				
Pulverization-stabilization; sidewalk reconstruction	\$306,714	\$306,714 (note 1)		
Sidewalk and pavement rehabilitation	\$468,100	\$468,100 (note 2)		
Minor sidewalk repairs	\$102,079			\$102,079 (note 3)
Planing of pavement	\$93,906			\$93,906 (note 4)
Hot milling	\$83,046		\$83,046 (note 5)	
Total of contracts granted	\$1,053,845 (100%)	\$774,814 (74%)	\$83,046 (8%)	\$195,985 (18%)
<b><u>In-house work</u></b>				
Asphalt laying and other tasks	\$885,133			\$885,133 (note 6)

**Note 1:** This involves major pavement pulverization and stabilization work. This work was carried out on pavements in very poor condition. It involved the base course and, consequently, extended the pavement's useful life span.

**Note 2:** This involves major rehabilitation work on pavement with a stabilized base, the installation of blacktop and the rehabilitation of sidewalks required following the reconstruction of pavement. For this work, the foundation was completely rebuilt, thereby significantly extending its useful lifespan.

**Note 3:** The work is carried out on various streets and the area of each of the sidewalk sections affected is small. In all, according to the contract, the work involved a total area of 500 m<sup>2</sup>. The borough made provisions for work on eight streets in 19 locations. None of the sidewalk sections has an area greater than 83 m<sup>2</sup>.



- Note 4:** This work consists in removing the asphalt blend from the pavement, in whole or in part, and then adding a new surface course (surface course installed by blue-collar employees). This involves major corrective maintenance work applicable to pavement in poor condition that is deteriorating at an accelerated pace. The work consists in restoring the pavement to good or excellent condition (making it possible for the surface course to be reconstituted). However, given the more advanced state of deterioration of the structure, a pavement treated in this way will generally deteriorate at a faster pace than when the structure is in good condition. We cannot determine from the capitalization policy whether this represents work that extends the useful lifespan of the structure.
- Note 5:** This work consists in spot repairs of the asphalt surface of the pavement via hot milling techniques over the entire territory of the borough, especially where old excavations have deteriorated and in locations where the planing is in poor condition. According to the nature of the work carried out, these can be considered more as an operating expense.
- Note 6:** The capitalized costs involve the cost of the materials and the equipment rental related to the work done by blue-collar employees. Close to half of the amount capitalized involves the asphalt surfacing of the same streets that were subjected to planing work, which was outsourced to a contractor. The capitalization of the planing work was uncertain (note 4), making the associated paving work uncertain as well. The other capitalized expenses also involve asphaltting and corresponding work as it pertains to projects that must be undertaken during the upcoming year.

Furthermore, in terms of the work carried out in-house in the two boroughs of the former Ville de Montréal, the wages of the blue-collar employees were not capitalized, which is not compliant with the capitalization policy. However, as we mentioned earlier, we believe that the capitalization of this work is questionable.

In terms of the supervision executed by outside firms, especially in relation to minor sidewalk repair and planing contracts, this was capitalized in 2003 by the SITE, when a contract for a sub-project was granted. As regards the preparation of the plans and specifications, as well as the supervision performed by the resources of the Ville de Montréal, the wages were recorded under the SITE's operating budget. However, for presentation purposes in the financial statements, an accounting entry is prepared by the SITE in order to capitalize these wages.

For the laboratory tests related to RRP contracts granted to contractors, these were under the responsibility of the laboratory of the Ville de Montréal. During our audit, we observed that the laboratory fees are capitalized under the three-year capital works budget.

In conclusion, measures must be taken by the three boroughs in order to apply the capitalization policy, but the Service des finances must make the policy more precise and therefore easier for the boroughs to apply.

We already made a recommendation in this respect, in the audit of the financial statements of the Ville de Montréal in 2002, stating that a directive clarifying this policy should be issued to enable the application of appropriate and uniform accounting procedures. However, during the audit of the financial statements in 2003, the directive had still not been issued by the Service des finances, despite its agreement with our recommendation. Therefore, we approached the Comité de vérification and the Service des finances of the Ville de Montréal, so that the Service des finances would provide us with a target date for the approval and distribution of this directive.

### **Recommendations**

**In order to ensure the proper processing of capital expenditures, the Direction des services administratifs of each borough should implement measures designed to apply the capitalization policy. These measures will need to take into account the directives to be issued by the Service des finances.**

#### ***Actions proposed by the borough of Saint-Laurent***

*“A corrective entry will be made in the accounting system as soon as the directive from the Service des finances clarifying the capitalization policy is received.*

*In addition, a detailed analysis is conducted by accounting personnel in order to ensure the capitalization policy has been properly applied.*

*Also, measures will be taken as soon as the directives of the Service des finances are issued in order to clearly explain their application to the managers concerned.”*

#### ***Actions proposed by the borough of Rivière-des-Prairies–Pointe-aux-Trembles–Montréal-Est***

*“The Direction des services administratifs will implement measures designed to apply the capitalization directives issued by the Service des finances as soon as they are received.”*

***Actions proposed by the borough of Mercier–Hochelaga-Maisonneuve***

*“We are in contact with the Service des finances to ensure that the capitalization criteria will be applied and respected in the establishment and execution of our three-year capital works budget as soon as the policy is issued. It is nevertheless necessary to note that if the current interpretation of most of the work we have historically supported with the three-year capital works budget is maintained, the interpretations of the effects of these operations (especially planing and scarifying) will exclude more than 70% of this work from funding through capitalization. As a result, obvious decisions would then have to be made as to the capitalized projects and the impact of any non-capitalized work on our operating budget.”*

**We reiterate that the Service des finances should issue directives clarifying its capitalization policy in order to ensure an appropriate and uniform accounting procedure for all users.**

***Actions proposed by the Service des finances***

*“An appendix to the administrative guideline “Capitalization and Amortization of Capital Expenditures” specifying the nature of the work covered by the road repair program is being drafted in collaboration with the Service des infrastructures, du transport et de l’environnement and will be released in October 2004.”*

# ***COMPUTER SECURITY AT THE VILLE DE MONTRÉAL***

## **BACKGROUND**

The Ville de Montréal (the City), like most large organizations, relies on data banks that enable it to perform its functions and provide services to its citizens. Such information must be considered an asset that, like all other major assets, is of incalculable value for the City and one that requires appropriate protection.

Most departments and boroughs control information that requires restrictions with regard to access and necessitates the protection of personal data. The integrity of information is fundamental in order to ensure that service management and delivery is based upon valid information. Finally, information must be made available in order to offer uninterrupted service to citizens as well as employees.

Security-related measures must be taken, therefore, in order to maintain the confidentiality, integrity and availability of the information in the City's possession.

## **METHODOLOGY AND SCOPE**

Information at the City comes in various forms and is recorded in various ways. For the purposes of this study, only information that can be qualified as "electronic" information has been considered.

All of the security measures that enable the goals of confidentiality, integrity and availability of electronic information to be achieved make reference to the notion of computer security. Computer security does not result from a series of measures but is, rather, associated with a methodical process of analysis and risk reduction.

As part of this mandate, our attention was directed to the monitoring of computer security management rather than the existing technological means for providing computer security or an exhaustive enumeration of all the technical weaknesses of the existing system. To do this, industry best practices, as well as the ISO 17799 and COBIT international standards, served as evaluation criteria. Our audit was conducted during the last quarter of 2004.

In view of the work carried out at the time we were planning the study, we excluded the City's police department (Service de police de la Ville de Montréal – SPVM) from our mandate. The SPVM has a computer network that is separate from that of the City, as well as a computer security team of its own. We also excluded from our mandate an audit of the controls relating to the physical protection of the City's information technology (IT) facilities.

We did, however, subject the City's network to technical tests that were conducted from within the network itself, but we did not follow-on the weaknesses detected in order to avoid disrupting operations.

## **OBSERVATIONS AND RECOMMENDATIONS**

At the City, computer security is the responsibility of the Direction des technologies de l'information (DTI) of the Service des services administratifs (SSA). In collaboration with corporate municipal stakeholders and the boroughs, the DTI must, among its other responsibilities, identify the issues and needs and then develop strategies, frameworks and overall solutions specific to this field.

During the past year, the SSA appointed a reputable firm of computer consultants to conduct an analysis of IT management at the City. The principal conclusion of the firm was to the effect that the City does not have the means to meet its own expectations, and that certain major projects, including security, are at risk.

The goal of this report, therefore, is to note those elements that, in our opinion, are at the origin of such a level of risk, and to respond to our own concerns, as expressed in the General Auditor's Annual Report for 2003, with regard to the general level of computer security at the City.

### **Organization of the “Computer Security” function**

#### Budgetary and human resources allocated and their effect on the function

The City owns 12,000 personal computers and 850 servers located in 350 buildings and 12 data processing centres. In order to fulfil its mission, the DTI also has more than 1,500 staff members at its disposal per year and an operating budget of \$57 million, \$30 million of which is allocated to interdepartmental arrangements and \$10 million to the boroughs.

We observed that the DTI has assigned only a single individual to the “Computer Security” function.

According to an survey conducted in September 2002 by *Information Security Magazine*, companies with inventories of 10,000 or more personal computers devote 5% of their IT budget to information security.

Given the size of the City and the complexity of its technological infrastructure, the “Computer Security” function has neither the financial resources nor the staff to ensure effective management of computer security as well as adequate protection of informational assets. Several findings that appear in this report are, for that matter, related to this problem.

Finally, we noted that, in 2003, the manager of the DTI’s computer security section commissioned a firm to produce a report on computer security and prepare an action plan. The “Computer Security” function was not able to implement it, however, as it does not have sufficient financial and human resources to do so. We were nevertheless informed that the DTI took steps to provide the “Computer Security” function with two additional staff members.

### **Recommendation**

**We recommend that the Service des services administratifs allocate adequate financial and human resources to the “Computer Security” function to ensure effective management of computer security as well as suitable protection for the City’s informational assets.**

### ***Actions proposed by the Service des services administratifs***

*“Since December 2004, three people have been recruited to temporarily look after duties related to the establishment of computer security framework. During the upcoming year, the DTI will be responsible for making sure these positions become permanent.*

*However, in 2005, the contribution of external human resources will be necessary to ensure support for security in the completion of the far-reaching projects that are central to the replacement of several outdated computer systems. To do this, the equivalent of eight people providing specialized professional computer security functions per year will be added in order to support these projects and to*

*develop security management practices. As for financing, the DTI is planning to allocate a budgetary provision for computer security. This allocation will be included in the budgets for information technology projects.” (Planned completion: June 2005)*

#### Roles and responsibilities

During a conference on computer security, a well-known Montréal journalist and columnist pointed out “security must be at the very core of IT concerns—not the last thing to be looked after if time and budget permit.” He also pointed out that “security is not an isolated event or a “one-shot” solution; it is a continuous process.” Furthermore, according to a study conducted by Gartner Inc., the two greatest computer security vulnerabilities are that:

- “security is not integrated into projects”;
- “there is a very poor business culture and lack of leadership with regards to security.”

We observed that the “Computer Security” function is limited to an advisory role and that it has no authority over the activities related to the security of informational assets. Its participation in IT projects is often on an ad hoc basis or even at project end. In some cases, it is nonexistent.

We also noted that there is no definition of the roles and responsibilities with respect to activities relating to computer security. The result is that no mechanism has been established to allow for the systematic involvement of the “Computer Security” function in IT projects.

In order to better substantiate our observations, we sought to find out about the impact of the “Computer Security” function’s limited involvement in IT projects. To do this, we selected the following three projects:

- SIMON project – Finance/Supply component;
- e-Cité project;
- repatriation of the City’s Web site.

#### *SIMON Project – Finance/Supply Component*

We noted that the “Computer Security” function is not part of the SIMON Project team. Moreover, according to the integrator’s tender, a security specialist was supposed to have been assigned to the

project. We observed, however, that no security specialist from the integration firm was assigned to the project and that the budget set aside was used instead to cover the additional expenses required for the integrator's "Unix administrator."

Nevertheless, on the initiative of the manager of the DTI's computer security section, an external resource was commissioned to carry out various kinds of security work, mainly in relation to the database being in production. No official mechanism is in place, however, to ensure that a follow-up is conducted by the "Computer Security" function, since this consultant reports to the head of the SIMON project's technology team.

#### *e-Cité Project*

According to the tender of the firm selected, the project did not provide for a security specialist. The DTI divisional manager who is responsible for the project mentioned that a budget allocation for the delivery of professional services was included in the company's contract in order to provide for such concerns as security. In the absence of a separate budget, there is a risk that the amount of money required for security will instead be used to meet some other need in the development of the application.

Although the project is just now getting under way, we have observed that the "Computer Security" function has not been involved in all of the aspects relating to the preparation of its technical specifications, particularly that dealing with the allocation of resources dedicated to security.

As in any other project, security must be taken into account right from the beginning of the development cycle to ensure that major risks are not forgotten or poorly evaluated. As mentioned in the business plan submitted by the firm, the City intends to facilitate communications with its various clientele. In order to accomplish this, the e-Cité project will provide the virtual storefront for the services provided by the City, the boroughs and associated organizations.

At the present time, no mechanism has been established to decide on the nature and type of information that will be accessible to everyone via the City's new Web portal and to authorize its use. During a conference held recently in Montréal, it was shown that in the absence of strict publication mechanisms for information circulated on the Web, it is easy for computer hackers to obtain information that will allow them to adversely affect the security of an organization by simply using a tool as easily accessible as a search engine.



This situation illustrates that the involvement of the “Computer Security” function in this project is essential.

#### *Repatriation of the servers for the City’s Web site*

During the last quarter of 2004, the DTI began repatriating the City’s Web site servers within its own infrastructure. According to the manager of the servers section of the DTI, this repatriation has allowed for the correction of certain deficiencies, in addition to enabling the City to save on Web hosting costs.

This repatriation was carried out, however, without the involvement of the “Computer Security” function and without any analysis of risks or vulnerabilities.

The consequence of this repatriation was that, after it took place, the DTI noted that the City’s Web servers were also hosting the Web sites of external organizations. In order to ensure the maintenance of their sites, which is primarily entrusted to external firms, some organizations have asked that they be granted remote access to the City’s infrastructure in order to be able to download files of all sorts (for example, texts, graphics, images). The involvement of the “Computer Security” function right from the beginning of the project would have prevented such a situation from arising.

#### **Recommendation**

**We recommend that the Service des services administratifs:**

- **assign authority over the activities and the establishment of controls related to the security of the City’s informational assets to the “Computer Security” function;**
- **proceed with the definition of roles and responsibilities with regard to activities involving computer security;**
- **proceed with the establishment of mechanisms that will ensure the “Computer Security” function’s systematic involvement in all IT projects such as SIMON and e-Cité.**

### **Actions proposed by the Service des services administratifs**

*“In terms of computer projects, the DTI is committed to developing project management practices that allow for the continuous involvement of the security function. However, on the basis of the governance model proposed by the Information Security Policy project, the DTI believes that the authority over computer-related information security is the responsibility of the Direction générale that, in collaboration with the Comité de sécurité de l’information, can play a more comprehensive, multidisciplinary and objective role. Furthermore, the DTI believes that all computer projects should be provided with budgetary provisions for ensuring information security. For that reason, the DTI is committed to signalling these requirements to its clientele when they are preparing projects and to ask that a provision for security be made within the budget allowances for projects. **(Planned completion: June 2005)***

*A proposal for a framework for action on security was developed to support of major projects. **(Completed)***

*The authority and scope of the “Computer Security” function in respect to the area of information security in projects governed by DTI clients is the subject of discussion. Actions were taken with a view to improving the security of major projects. Security resources were thus involved as part of the SIMON and e-Cité projects in 2004. As for the project to repatriate the City’s Web servers, a vulnerability analysis was conducted through a professional services contract.” **(Completed)***

### **Governance**

#### Information security policy

Since information is considered to be one of the City’s essential resources and since it represents an extremely valuable capital, its protection must constitute a fundamental element of the City’s corporate security strategy.

This strategy must be set out in an information security policy and must take into account information in its most diverse forms: paper, audio, electronic, etc. It would be advisable, therefore, to avoid limiting this strategy to the computer sector alone and have it apply to all of the City’s areas of activity (corporate services and the boroughs).

The security policy will thus constitute the reference for everything involving the protection of information. It must be the foundation of the City's security program and determine the course of action to be adopted with regard to its implementation and management. It must include, among other elements:

- a definition of information security, its general objectives and its importance for the City;
- management's goals;
- a definition of the general and specific responsibilities;
- compliance and accountability requirements.

In order to illustrate the City's support for and commitment to information security, senior management (the Direction générale at the corporate services level and management at the borough level) must approve the policy.

During the course of our audit we noted that the former Ville de Montréal, the Communauté urbaine de Montréal (CUM), as well as a borough that was formerly a suburban municipality had all adopted security policies. However, these policies have not been kept up to date and are not applicable to all the employees of the new city.

With reference to this situation, the head of computer security suggested a draft computer security policy to an ad hoc committee made up of representatives from corporate services and the boroughs.

Following the committee's discussion, we observed that a proposal had been issued to the effect that the policy applies to all municipal departments and that adherence to the policy on a voluntary basis be "proposed" to the boroughs.

In order to achieve the goal of adequate management of information security within the City administration, the ISO 17799 standard, which is the international norm in respect to information security, sets out that security policy requires adherence to the following guiding principles:

- strong management involvement;
- support from all those working within the organization.

The decision of one or several boroughs not to adhere to this policy would create a breach on the level of security. The non-uniform application of the standards that would result from the implementation of the policy would make the City more vulnerable to multiple security threats (fraud, virus attacks, attempted intrusions, etc.), given the interconnection of the networks and the sharing of information between corporate services and the boroughs.

## Recommendations

We recommend that the Direction générale and borough managers:

- approve the information security policy;
- ensure that the information security policy applies to all the boroughs and corporate services;
- issue and communicate the information security policy to all employees and other stakeholders who use or have access to the City's informational assets.

We also recommend that the Direction générale should make and declare information security a strategic issue by virtue of section 57.1 of the Charter of the Ville de Montréal.

### *Actions proposed by the Direction générale*

*"We are of the opinion that information security is a major strategic issue to which we will devote all necessary attention.*

*After having consulted all of the boroughs involved, the DTI will present, in the near future, a draft "corporate" information security policy to the Direction générale.*

*Following the discussions that will be held on this policy, we will commit ourselves to having it approved by the appropriate bodies in order for it to have all of the necessary legitimacy to be applicable to all of the information the City owns or has in its custody." (Planned completion: May 2005)*

### Information Security Management Committee

Computer security is the responsibility of the DTI and, more specifically, the manager of the computer security section. However, in an organization the size of the City, he or she cannot act alone. That is why the ISO 17799 standard recommends the creation of a information security management committee.

The major duties of this committee are:

- to propose changes to the information security policy;
- to approve the IT security standards that will result from the implementation of the information security policy;
- to approve the major initiatives that will enable information security to be strengthened.

At the request of the manager of the computer security section, a committee made up of representatives from sectors with specialized expertise (for example, legal affairs, industrial relations, registry) and from business lines (corporate services and boroughs) was established, initially, to participate in the information security policy project.

The role of this committee is precarious, however, since it has no official status. Furthermore, the representatives are not obliged to remain on the committee and can withdraw without notice, thereby affecting the overall vision of the organization that such a committee provides.

## **Recommendation**

**We recommend that the Direction générale:**

- **formalize the creation of the information security management committee and ensure its long-term survival;**
- **ensure that the committee is made up of representatives from sectors with specialized expertise (for example, legal affairs, industrial relations, registry) and from business lines (corporate services and boroughs).**

## ***Actions proposed by the Direction générale***

*“By recognizing that the policy mentioned in the preceding recommendation rightly confirms the existence of an information security management committee, and that it prescribes its composition, we consider that once this policy is adopted, its sustainability and its representativeness will, ipso facto, be assured.” (Planned completion: May 2005)*

## Evaluation of the risks related to information security

### Risk assessment

The ISO 17799 standard considers that IT security practices are related to risk management. It is not, however, either feasible or economically viable to eliminate all the risks or threats that constitute a menace to the City's informational assets.

A risk assessment must be conducted to identify the threats that are most likely to occur and that could cause the greatest damage. The risk assessment must also enable the identification of those of the City's major areas of activity that would justify the allocation of the resources and efforts required to make them secure.

We have noted that no assessment of the risks and threats to IT security has been carried out at the City.

### Recommendation

**We recommend that the Service des services administratifs:**

- **carry out a risk assessment in order to identify the threats that are most likely to occur and that could cause the greatest damage;**
- **identify those of the City's major areas of activity that would justify the allocation of the resources and efforts required to make them secure.**

### ***Actions proposed by the Service des services administratifs***

*"As part of its planning of strategic policy steps, it was decided in 2004 that the DTI would successively complete an optimal management plan (**completed**), a master plan (**being completed at the present time**), and a security master plan.*

*In a few weeks from now, the DTI will ask the Comité exécutif for its authorization to initiate a call for tenders to retain the services of a specialized firm to help it implement the security master plan. (**Planned completion: May 2005**)*

*This master plan will enable the identification of the major vulnerabilities the City has in terms of security as well as the major threats to which the City is exposed. This exercise will allow for the documentation of the strategies aimed at correcting weaknesses, and establishing the priorities, efforts, investments and recurrent budgets needed to remedy them. The DTI is committed to identifying the resources*

*necessary for the implementation of the actions that will be recommended and prioritized by the security master plan.” (Planned completion: December 2005)*

#### Inventory and classification of informational assets

Once the identification of these major areas of activity has been completed, a census of the informational assets (for example, electronic data banks, information systems, software packages) that support these areas must be conducted. In order to accomplish this, the ISO 17799 standard recommends that an inventory of informational assets and their associated technological resources be taken in such a way as to guarantee that they receive a level of protection adapted to their criticality.

The standard also recommends that each informational asset be placed under the responsibility of an owner for whom one of the responsibilities will be to participate in its classification. The classification of an asset enables us to determine its criticality based on its degree of importance, such as the effect that its absence could have on an area of activity's operations.

We observed that no inventory of informational assets has been made at the City. We have been informed, however, that following a request by the Directeur général, the DTI produced an inventory of the City's information systems in May 2004. According to the manager of the DTI's strategic planning division, this inventory paints a fairly complete picture but it is not a detailed compilation of the information belonging to each information system and does not contain data about all of the City's information systems.

We also noted that the DTI does not have an inventory of the technological resources associated with each informational asset.

Finally, we observed that no classification system for informational assets exists at the City. The result of this situation is that the City has no guarantee that its informational assets, as well as the technological resources associated with them, receive a level of protection adapted to their criticality.

## Recommendation

We recommend that the Service des services administratifs:

- prepare an inventory of informational assets and their associated technological resources;
- make sure it identifies an owner for each informational asset;
- proceed with the classification of informational assets, in collaboration with their identified owners, in order to determine their criticality.

### *Actions proposed by the Service des services administratifs*

*“The first steps in the implementation of the master plan will enable the introduction or completion of inventories on the basis of needs. The DTI is aware of the problem and it considers that the activities linked to the preparation of inventories must be tied to its activities for the improvement of its IT management procedures. Furthermore, such inventories should not exceed real needs, given their cost, their degree of accuracy and detail. Thus, with regard to security, the master plan will allow for the definition of the needs in terms of inventories and asset classification. Furthermore, through this exercise, the DTI will contribute to raising its clients’ awareness about the importance of information classification.” (Planned completion: December 2005)*

## IT security standards

Once the information security policy has been adopted, and in order for it to be completely effective, IT security standards must be developed. These standards are an essential instrument for the use of sound practices since they prescribe the minimal requirements to which the City must adhere with regards to IT security.

We noted that IT security standards had been developed for the former Ville de Montréal, as well as for one of the boroughs that had formerly been a suburb. These standards have not been kept up to date, however, and are not applicable to all the employees of the new city.

Standards are statements, rules and specific controls that must be followed and respected in each of the fields to which they apply. They are generally grouped according to the nine security domains described in the ISO 17799 standard. For example, they include:

- the appropriate use of a computer, e-mail and the Internet;



- the management of access to computer data;
- vulnerability management (for example, patch management, antivirus software).

Standards are developed in the order of priority dictated by the strategy adopted following the information security risk assessment.

In order to better illustrate the result of the absence of security standards at the City, we conducted some tests with the help of two technologies used by hackers in attempts to gain unlawful access to computer networks.

Moreover, as part of the City's activities, remote access to technological infrastructures has been granted to external entities (for example, companies, consultants, paramunicipal bodies). We therefore conducted an examination of the management controls implemented in order to assure ourselves that they function appropriately.

We excluded from our investigation, however, the remote access granted by the former CUM, since at the time of our audit a procedure for transferring to the DTI service centre all of the remote accesses that had been granted was in progress. We nevertheless observed that, contrary to the practices adopted by the former City of Montréal, no remote access had been subject to a letter of agreement stipulating the conditions for its use.

We also excluded from our investigation the boroughs created from former suburbs since, during the audits we conducted in 2002, 2003 and 2004 on the general controls of the computing environments in these boroughs, we noted that there were no directives concerning remote access.

#### *Access by modem*

One of the techniques used by hackers involves looking for non-secure modems with a specialized software program that can compile a group of telephone numbers in a short period of time. Once such a list has been obtained, the hacker can try to access the server, personal computer or network to which the modem is linked, whichever is the case.

We set about dialling the phone numbers used by the City and were able to find 274 open modems—that is, modems that would answer an incoming call.

Afterwards, we sent our results to the telecommunications section of the DTI's corporate sector in order to determine whether or not those modems found to be open appeared in its data bank as authorized modems. On the basis of the work carried out, 98 modems were identified as being "unauthorized."

We also observed that, in the case of authorized modems, no approval by the "Computer Security" function is required before the modem is put into service and no compliance verification is carried out by that department.

The consequence of this situation is that there is a risk that some modems, whether authorized or not, will serve as points of entry for hackers.

#### *Access by wireless network*

Because technology is evolving at a fast pace, it is now possible to link together the computer equipment of a group of people who need to communicate amongst themselves wirelessly.

Notwithstanding the fact that wireless networks are increasingly becoming common technology, their cardinal weakness remains security. Communications carried out by means of radio waves can be picked up, in many cases, at a distance beyond a company's perimeter. Moreover, it is now known that several installations have been made without modifying the default parameters, which means that the encryption of the information circulating on the network is not activated. The result of this situation is that an unauthorized connection to the network can be made that enables a hacker to carry out attempted intrusions on this network's computers or to intercept information sent between a computer and the unit serving to link the network's computers together—the wireless access point.

The most widely used communication standard at the present time is the 802.11b standard, which employs the WEP (Wired Equivalent Privacy) encryption protocol. Several criticisms can be levelled at this protocol, however, the major one being its vulnerability, as it can be the object of an illegal entry by a hacker. The WPA (WI-FI Protected Access) protocol should instead be favoured, since it offers more security when information is transferred.

With the help of specialized equipment, we proceeded to look for wireless access points. We wanted to determine whether or not, once the access point was located, the wireless network offered sufficient protection against attempted intrusions.

To do this, we made a random selection of 22 of the Ville de Montréal’s offices throughout the city. We were able to locate seven wireless networks, but we did not attempt to penetrate them. As illustrated in the table below, three networks are very vulnerable to attempted intrusions because no protection has been activated, and three others are vulnerable because WEP is the activated protocol. A network is considered satisfactory if it uses the WPA protocol.

Site	Protection against attempted intrusions into a wireless network		
	Very vulnerable	Vulnerable	Satisfactory
1	X		
2	X		
3		X	
4	X		
5		X	
6		X	
7			X
Total	3	3	1

Finally, as for the acquisition of portable computers, we noted that the DTI recently made standard a portable computer offering wireless functionality without, however, involving the “Computer Security” function in the standardization process.

*Remote access granted to external entities*

We observed that there are no documents in existence that spell out the procedure and conditions for granting remote access. In certain cases, the requests for access were the object of an agreement that has to be approved by the Comité exécutif, whereas in other cases, only a letter of agreement stipulating the conditions for use was completed.

We also noted that there are no documents in existence that describe the access mode required to access the City’s infrastructures. The consequence of this situation is that certain entities are obliged to submit to a strong authentication process (where the use of a smart card as well as encryption software is obligatory), whereas in other cases, only a weak process is required.

Following the tests we conducted, we were not able to trace any agreements or letters of agreement for 25 external entities for which access to the City's infrastructures was noted. We also observed that 32 users had not accessed the infrastructures for more than a year. This situation occurs because there is no verification to ensure that the access rights granted:

- are always required;
- are strictly limited to the business needs for which they were approved.

We then examined 16 files supporting requests for access rights. Of the seven files where an agreement had been requested, we noted that:

- two agreements had not been signed by a representative of the City;
- in six files, the resolution of the Comité exécutif was missing;
- in one file, the agreement was missing;
- in five files, the list of users and the access rights granted to them was either missing or incomplete.

With regard to the nine files where a letter of agreement had been requested, we observed that in:

- one file, the letter of agreement had not been signed by a representative of the entity;
- eight files, the list describing the access rights granted was missing;
- seven files, the list of authorized users was missing.

The result of this situation is that the DTI does not have any assurance that all of the remote access rights granted to external entities are authorized and that they are strictly limited to the business needs for which they were allowed.

## **Recommendations**

**We recommend that the Service des services administratifs, following an assessment of the risks related to information security:**

- **co-ordinate the development of IT security standards with the members of the information security management committee;**
- **ensure that the standards be approved by the information security management committee.**

**We also recommend that the Service des services administratifs:**

- **co-ordinate the development of standards with regard to:**
  - **access by modem;**
  - **access by wireless network;**
  - **remote access rights granted to external entities.**
- **proceed with the development of specific procedures aimed at better controlling the remote access rights granted to external entities.**

***Actions proposed by the Service des services administratifs***

*“As part of its mission, the “Computer Security” function will proceed with the development of security standards based on the results of the risk analysis, policies and priorities pursuant to the master plan.*

*Already, in 2005, two new security directives were developed and approved by the Comité de sécurité de l’information to protect the City from inappropriate use of the Internet and e-mail, as well as risks from cyberspace. Directives aimed at providing guidelines for the use of modems, electronic networks and remote access will be developed and submitted to the Comité de sécurité de l’information in order to meet this request. **(Planned completion: July 2005)***

*The DTI is committed to developing procedures aimed at providing better control over remote access granted to external entities. Eventually, the management of agreements giving access to the City’s informational assets to third parties will be tightened up and better controlled.” **(Planned completion: July 2005)***

**Awareness program**

Security problems are, in large measure, related to people. An awareness program’s goal is, therefore, to make employees understand the sensitive nature of the information they are dealing with and to make them aware of the possible threats they risk being confronted with, in addition to informing them of their duties and responsibilities.

Such a program also helps employees understand the requirements of an information security policy, as well as the standards and procedures they must follow, and of the impact that non-compliance can have on the security of informational assets.

This program must also be addressed to contract employees, consultants and external entities so that they are informed of their responsibilities with regard to the policy, as well as the standards and procedures in force at the City.

In order to achieve the expected benefits, an effective awareness program must take the following elements into account:

- the program must first of all receive the support of senior management;
- the major objectives to be pursued must be clearly defined;
- the target clientele must be identified;
- appropriate instructional tools and communication vehicles must be used;
- the program must be evaluated periodically in order to determine if it is achieving the objectives set out at the beginning.

We observed that the DTI does not have an official IT security awareness program.

### **Recommendation**

**We recommend that the Service des services administratifs:**

- **proceed with the development of an IT security awareness program;**
- **make sure to obtain prior support from the Direction générale so that the program can be addressed to all of the employees and stakeholders involved.**

### ***Actions proposed by the Service des services administratifs***

*“As for the development of an awareness program, it will be supported by one of the guiding principles of the new information security policy project that should be adopted by the City’s decision-making bodies. The “Computer Security” function believes in this awareness measure and is working to complete a plan in order to submit it to the Information Security Management Committee. **(Planned completion: June 2005)***

*To accomplish this task, the DTI will ask for the assistance of the Direction des communications et des relations avec les citoyens, the department that is responsible for communication practices and dissemination of information at the Ville de Montréal.”*

## Security incident management

We observed that the DTI has not developed a procedure allowing for the effective management of all computer security incidents, which would thus ensure that adequate procedures are followed when such incidents occur. We have, however, noted that the service centre has a concise escalation procedure in the case of virus attacks.

Since a computer security incident is defined as an event that could jeopardize the availability, integrity and confidentiality of an informational asset, it becomes important to establish a procedure for managing incidents in order to:

- obtain a better understanding of the roles and responsibilities of the stakeholders;
- react promptly when an incident occurs;
- optimize resource management;
- achieve better communication among all stakeholders.

Without any documentation identifying the impacts associated with computer security incidents, the DTI is not in a position to raise the awareness of senior management about security-related problems.

The 2004 edition of the *Global Information Security Survey* conducted by the firm of Ernst & Young reveals that among the various dangers that threaten information security in organizations, 77% of the respondents are particularly concerned about viruses such as Trojan Horses and Internet worms. It should be mentioned that the CodeRed virus alone cost more than US\$2.5 billion worldwide in loss of productivity and repairs.

The City, like other organizations, has been the victim of attacks that can be attributed, in particular, to viruses. In this regard, we obtained a copy of the computer security report produced by the "Computer Security" service following the incident caused by the "Blaster" computer worm that occurred at the City on August 13, 2003. As mentioned in the report, "hundreds of work stations were put out of service by corrupted computers, resulting in a considerable loss in electronic data processing capacity at the Ville de Montréal . . . . This event had a considerable negative impact on the City's corporate services for nearly one day."

According to the report, the computer worm entered the City's network through one or several of its computers that were not protected by an updated antivirus program. It is also mentioned that the "incident was confined, but the threat is still present and the problem remains unresolved." In this regard, we observed that several recommendations contained in this document have not yet been acted upon by the DTI, resulting in that the City is still vulnerable to this type of incident. Among the recommendations set forth in this report, the most important are:

- proceed with the development of an incident management procedure;
- proceed with the development of a computer interconnection standard (work stations and servers) for the computer network. As mentioned in the report, the consequence of having no standard has been that “no formal and effective measure of quality assurance is applied in a manner that ensures that all work stations are, and remain, compliant with the requirements needed for the stability of the common network”;
- establish quality assurance practices aimed at ensuring that the connection requirements are respected and that a corporate antivirus program is installed, maintained and automatically updated on all computers;
- promote the use of an integrated technology management (ITM) system to support all of the activities related to the installation and updating of work stations, as well as the screening for nonconformities;
- proceed with the installation of security patches on computer system software as soon as they are issued;
- proceed with the elimination of non-secure modems linked to the City’s telephone network;
- ensure that telework is carried out with computers whose protection mechanisms cannot be altered by the teleworker;
- prohibit access to “Hotmail”-type sites since they are true points of entry for viruses.

We were also informed that the Sasser virus that appeared in April 2004 also reached the City’s computer network. In spite of the efforts expended to eradicate it, the virus is still present in the network.

In order to protect itself effectively against such incidents, the DTI must proceed as rapidly as possible to develop a procedure for security incident management. This procedure should include, among other provisions, the following elements:

- identification and classification of incidents;
- escalation procedures;
- eradication procedures;
- recuperation procedures.



## **Recommendations**

**We recommend that the Service des services administratifs proceed with the establishment of a security incident management procedure including, among other provisions, the following elements:**

- **identification and classification of incidents;**
- **escalation procedures;**
- **eradication procedures;**
- **recuperation procedures.**

**We also recommend that the Service des services administratifs proceed, with haste, to implement the following recommendations, which were contained in the report prepared by the “Computer Security” function on the “Blaster” security incident:**

- **proceed with the development of an incident management procedure;**
- **proceed with the development of a computer interconnection standard (work stations and servers) for the computer network;**
- **establish quality assurance practices aimed at ensuring that the connection requirements are respected and that a corporate antivirus program is installed, activated and automatically updated on all computers;**
- **promote the use of an integrated technology management (ITM) system to support all of the activities related to the installation and updating of work stations, as well as the screening for nonconformities;**
- **proceed with the installation of security patches on computer system software as soon as they are issued;**
- **proceed with the elimination of non-secure modems linked to the City’s telephone network;**
- **ensure that telework is carried out with computers whose protection mechanisms cannot be altered by the teleworker;**
- **prohibit access to “Hotmail”-type sites since they are true points of entry for viruses.**

### **Actions proposed by the Service des services administratifs**

*“The DTI has equipped itself with a first procedure for managing incidents. It is also committed to improving this procedure by assigning additional resources to it. (Planned completion: November 2005)*

*The “Computer Security” function has been working since January 2005 to develop frameworks. A subset of directives targeting electronic networks will be prepared and submitted to the Information Security Management Committee in order to fulfil the recommendation. (Planned completion: November 2005)*

*All clients who have entered into service agreements with the DTI are protected by an automatic update of the “corporate” anti-virus. The DTI is willing to provide this service to other clients if so requested. Actions will be taken as soon as the computer interconnection standard for the computer network has been approved. (Planned completion: December 2005)*

*The next phase aims at extending the functionalities of the ITM system to clients who have service agreements with the DTI. Following this, the DTI will be in a position to evaluate the prerequisites for using the ITM to screen for non-conforming activities. The ITM tools in use will be installed on the 6,500 work stations of the former CUM and the former Ville de Montréal. Afterwards, the DTI will begin an evaluation of the feasibility of extending the ITM to other clients. (Planned completion: January 2006)*

*With the exception of critical updates for DTI clients, all other updates must be examined and tested before their installation in order to prevent harm to the normal activities of the information system. As part of the contract between the City and Microsoft, the DTI will call upon Microsoft’s professional services to find the best approach to use. (Planned completion: September 2005)*

*Supervisors have been identified who will proceed with the verification, securing and, if necessary, the elimination of non-secure modems. (Planned completion: June 2005)*

*The solution has been purchased and the procedure for acquiring the necessary professional services has been finalized. The work will begin in the very near future. (Planned completion: December 2005)*

*The WebSense solution has been purchased and work will begin as soon as the acquisition of the equipment (the servers) has been finalized. This tool will enable us to control Internet access and do the necessary blocking.” (Planned completion: November 2005)*

### **Contingency and continuity plans**

We observed that the DTI does not have an operational and updated contingency plan that enables it to protect itself against any event that could result in the shutting down of its operations. We have, however, noted the existence of a plan developed for the former Ville de Montréal's IBM mainframe. This plan has not been updated in any way, and the only test conducted was described as incomplete by the manager of the computer security section.

In the case of short-term interruptions, we observed that the DTI has no continuity plan.

Furthermore, during the audits conducted in 2002, 2003 and 2004 on the general controls of the computing environments of 12 boroughs, we noted that these boroughs do not have a computer contingency plan. Moreover, the majority of them do not have a formal continuity plan. However, according to the action plans that have been submitted to us, the majority of the boroughs anticipate having a computer contingency plan beginning in 2006. They expect that the rollout of the SIMON project will enable them to be supported in this matter in terms of their financial systems.

At the time we conducted our audit of the SIMON project during the months of November and December 2004, we observed that neither a contingency plan nor a continuity plan had been planned for as part of the project's implementation.

The lack of a contingency plan and a formal continuity plan at the DTI, borough and SIMON project levels could result in delays during a recovery, as well as scheduling problems, causing gaps in service delivery to citizens. Furthermore, in case of a major breakdown, the continuity of operations could be affected to the point where financial and operational impacts would result.

In this area, as for any other priority, risk assessment enables us to facilitate the allocation of resources to the activity sectors that need them. A risk assessment must, therefore, be carried out to analyse the effect of interruptions on the organization's critical areas of activity, which has not been done at the City.

In this regard, the ISO 17799 standard recommends that a continuity management procedure be established. The major steps to be taken in such a procedure are:

- to analyse the risks affecting critical operations procedures;
- to analyse the effect of interruptions on areas of activity by distinguishing minor incidents from serious incidents;
- to develop and document a coherent continuity strategy with operating targets and priorities;
- to incorporate continuity management into procedures and the organizational structure;
- to test the plans and procedures on a regular basis.

### **Recommendation**

**We recommend that the Service des services administratifs proceed with the establishment of a continuity management procedure involving the City's critical areas of activity.**

### ***Actions proposed by the Service des services administratifs***

*"The DTI believes that planning for business continuity is very important. Planning for the continuity of IT services must meet the requirements dictated by the City's business continuity planning.*

*For its part, the Centre de sécurité civile de la Ville de Montréal is preparing to collect information regarding the continuity of procedures critical to the mission of the City's entities in case emergency measures are introduced. Inter alia, the DTI would like to tie its exercise for identifying critical informational assets to this process for identifying critical process.*

*The DTI believes that the security master plan will enable the identification of certain vulnerabilities at the City in respect to technology-related business continuity. This exercise will permit the documentation of strategies aimed at correcting weaknesses and the identification of the priorities, efforts, investments and recurrent budgets that will have to be allocated to remedy them. **(Planned completion: November 2005)***

*Providing for the contingency of computer systems can prove to be very expensive. It must be prioritized on the basis of real needs, relative costs and the tolerance for risk in the various business sectors. On the technological level, therefore, the DTI will contribute to the planning for the continuity of the City's business to meet administrative needs, as well as to ensure emergency preparedness.*

*Some systems have already been judged to be critical by the general auditor and each business sector involved has been informed about this. Projects for completing computer contingency plans have been initiated, and a specialist has been assigned to evaluate the situation and produce a work plan.”*  
**(Planned completion: June 2005)**

### **Assessment of computer security**

Informational assets, the technological resources associated with them and the environments in which they operate are dynamic. The numerous changes that are made to them affect security. We could mention, for example, technological improvements, connections to external networks or the emergence of a new threat.

In order to ensure that the security features introduced operate in an adequate manner, the ISO 17799 standard recommends periodic audits of IT security. The standard also recommends that a vulnerability assessment be conducted by an independent organization in order to verify the effectiveness of the security features introduced and to identify the virus entry points that could interfere with the availability, integrity or confidentiality of an informational asset.

We observed that the DTI does not carry out periodic audits of IT security. In 2003, however, it did give an independent organization a mandate (described as “very basic”) to conduct intrusion tests on the City’s network. However, in spite of the discovery of some vulnerable points, the exercise was not repeated.

In order to better illustrate the impact caused by the lack of a periodic evaluation of IT security, we also proceeded with intrusion tests and tried to identify the loopholes that would enable someone to access the computer systems in an illicit manner. We did not follow-on them, however.

We also proceeded with a review of password management in order to assure ourselves that passwords offer adequate protection against theft of users’ identities.

*Intrusion tests*

The 2004 edition of the *Global Information Security Survey* conducted by the firm of Ernst & Young reveals that, among the various dangers that threaten information in organizations, 60% of respondents said they were concerned about the possibility of misconduct by their employees. Given the results of this survey, we decided to conduct our intrusion tests from a work station located inside the City's network.

For the purposes of our test, we selected 24 servers. In order to better evaluate the significance of the vulnerabilities discovered during our test, we rated them using the following grid:

<b>Significance of the vulnerability</b>	<b>Assessment and Action to Take</b>
<b>1</b>	Very high, requires immediate correction
<b>2</b>	High, requires correction
<b>3</b>	Satisfactory

As illustrated in the following table, 13 of the 24 servers reveal one or several vulnerable points. One weakness in particular concerned us. It was reported to the management of the department involved.

Description of the vulnerabilities	Number of servers affected	Significance of the vulnerability
Access to the server with the help of the Administrator's account	1	1
The Web application is vulnerable to a type of attack known as cross-site scripting. This weakness enables a hacker to retrieve the code and password of a valid user or to secure a user's cookie in order to divert his/her session	2	1
An anonymous access permits the modification of a home page on a Web site	1	1
An anonymous access enables entries in the database source directory	1	1
An anonymous access to the server is possible through the file transfer protocol (FTP) which enables the uploading or downloading of files of various kinds (for example, texts, graphics, images)	8	1
Access to the server's control console is not protected	1	1
Access to system files is permitted	1	1
Access to the list of users is permitted	5	1
An anonymous access enables one to obtain information on server configuration through the Simple Network Management Protocol (SNMP) used by administrators to manage computer equipment and diagnose problems	7	1
An anonymous access enables one to obtain information about the configuration of the database(s)	6	1
The Web server application was installed using the "by default" options, which enables one to obtain configuration information	5	1
All of the services are installed without any restriction (for example, mail entry, Telnet, FTP)	1	1
An anonymous access allows access to file sharing	4	2
Access to a file directory on the Web server is permitted	1	2
No vulnerability was detected	11	3

As part of its various mandates, the City grants professional service contracts to consultants and various professional firms. During the time they are delivering their services, some consultants are given access to Notes, the corporate e-mail system. We observed, in this regard, that several consultants use their own portable computer to log onto Notes and that they have the opportunity, like all other users, to make a copy of the Notes corporate address book or to use the Notes function that enables the transfer of the entire contents of the address book to a text file (ASCII) on their work station.

The Notes corporate address book contains many pieces of information. These include:

- the list of the 10,315 Notes users and servers;
- the individual record of every user, which includes:
  - last name and first name;
  - job title;
  - name of the department he/she belongs to;
  - work address;
  - telephone number at work;
  - fax number at work;
  - e-mail address at work;
  - work station (computer) ID.
- the list of all groups, including their members;
- the list of all users grouped by department.

There is, therefore, a risk that the information contained in the address book could be used for commercial gain or fraudulent purposes against the City or its employees.

#### *Password management*

In order to provide adequate protection, the choice of a password must be made with respect for strict rules. For example, the rules might include the use of special characters or prohibit the use of default passwords or a password that is easy to guess.

For the purposes of our test, we asked the administrator of one of the DTI's major "Active Directories" for a copy of the password file. Remember that an Active Directory is an electronic directory that enables the identification of all information about a network, including the users.

At the time of our test, the Active Directory contained 2,643 users, coming primarily from the following areas:

- the nine boroughs created from the former Ville de Montréal;
- the SIMON project;
- certain corporate services.



With the help of software that is available free of charge on the Internet, we systematically tried all of the possible combinations (numbers, letters, special characters). This technique, known as a brute-force attack, is used by hackers to try to obtain unlawful access to a computer system (for example, a network or a server).

As illustrated in the following table, 2,161 of the 2,643 passwords were discovered (1,976 of them in less than a minute). This result can be explained by the fact that there are no strict rules governing the choice of passwords, because 1,983 of the 2,161 passwords discovered were the default password, which is either easily identifiable or the same as the user code.

Total Population	%	Number of passwords discovered	%	Number of passwords discovered in less than a minute	%	Number of easily identifiable passwords	%
2,643	100	2,161	82	1,976	75	1,983	75

Finally, we observed that the current configuration of the Active Directory ensures that the list of user codes is accessible to everyone. We also noted that there is no protective mechanism in place to suspend a user code after a set number of unsuccessful access attempts is reached. The consequence of this situation is that a hacker is able to carry out an “on-line” brute-force attack on all of the Active Directory’s user codes. We did not, however, try to take advantage of this weakness, in order to avoid disturbing operations.

**Recommendations**

**We recommend that the Service des services administratifs:**

- **proceed with periodic audits of IT security;**
- **give an independent organization the mandate to proceed with a vulnerability assessment, in order to identify the flaws in IT security that could result in an attack on the availability, integrity or confidentiality of the City’s informational assets.**

### ***Actions proposed by the Service des services administratifs***

*“The DTI has instituted a public call for tenders aimed at assigning the monitoring and overall analysis of network and server infrastructure vulnerabilities to an external firm. This monitoring, to be conducted in real time for attempted intrusions and planned for vulnerability analyses, will enable the City to fulfil this recommendation. A recommendation in respect to awarding this contract will be brought to the attention of the Comité exécutif of the City sometime between now and the month of April.” (Planned completion: May 2005)*

**We also recommend that the Service des services administratifs:**

- **proceed with the correction of the vulnerable points that were discovered as a result of our intrusion tests;**
- **prevent the copying of the Notes corporate address book or its contents at a work station;**
- **proceed with the correction of the vulnerable points that were discovered as a result of our tests on the password management of a major DTI Active Directory.**

### ***Actions proposed by the Service des services administratifs***

*“With regard to the various technological vulnerabilities raised in this part of the audit, actions were taken as soon as the general auditor sent details about these weaknesses on February 9. The server vulnerabilities that were noted are currently the subject of a specific evaluation and of the planning for corrective measures to be implemented, based on the greatest risks. In addition, the remote surveillance service mentioned earlier will help to better monitor vulnerabilities. (Planned completion: June 2005)*

*As for the modems, the “Notes” address book, passwords, wireless networks and remote accessing, each anomaly noted is the subject of a specific evaluation at the present time and planning for corrective actions is under way, with the goal of preventing any harm to the current operations of the Ville de Montréal. In a more general way, the DTI is meeting the challenge of correcting the weaknesses present with the goal of improving security and with concern for minimizing the impact of its actions that could depend on the uncontrolled or inadequate use of the technologies involved on the City’s business procedures. (Planned completion: September 2005)*

*The DTI is committed to taking permanent management measures to avoid the occurrence of such vulnerabilities in the future.”*

# ***OVERVIEW OF GENERAL COMPUTER CONTROLS IN THE BOROUGHS***

## **BACKGROUND**

The boroughs created from the former suburban municipalities have various computer systems to process financial data and other information. Depending on the borough, the system involves a software package acquired from a supplier or a group of applications developed in-house. These systems make it possible to process data, especially data related to accounting, payroll and purchasing operations.

The systems run on different platforms (for example, IBM-compatible PC, SUN, HP), which vary from one borough to another, and use different programming languages. The majority of users access the systems by way of a microcomputer (work station) connected to a network via a server using a Windows 2000 operating system. Anywhere from 30 to over 300 work stations (140 on average) are linked to such a network, depending on the size of the borough in question.

Each borough manages its computer resources independently. Its responsibilities can vary, from developing applications and maintaining programs to purchasing and maintaining software and hardware, supporting the microcomputer environment and administering technical support contracts with outside suppliers. In nearly a third of the boroughs, the primary duty of the information technology (IT) function is to manage these outsourced contracts.

In 2002, 2003 and 2004, as part of an interim audit to obtain an opinion on all the financial statements of the Ville de Montréal, we audited the general computer controls in 12 boroughs, which represent 19 of the former suburban municipalities. It is worth noting that, as of January 1, 2006, eight of them will be reconstituted as municipalities.

## **METHODOLOGY AND SCOPE**

The purpose of the audit was to establish whether the existing general computer controls promote data security, integrity and accessibility, especially in respect to data of a financial nature.

To determine this, the standards and policies of the Ville de Montréal, as well as industry best practices, were used as evaluation criteria.

The audit focussed primarily on the general IT controls for the systems running the boroughs' financial applications, including the accounting, payroll and purchasing systems. Among the elements covered were the following:

- internal IT organization/structure;
- physical security and computer environment;
- primary basic logical security controls for the prevailing platforms and financial applications;
- program modifications;
- telecommunications, including remote access;
- backup strategy, including physical protection of backup media;
- contingency plan to deal with short-term service interruptions;
- recovery plan;
- antivirus programs.

Our work was limited to operations carried out by the boroughs and did not address controls exercised by external firms hired to provide software support (for example, program modifications made by the supplier). Also excluded from the audit were environments running non-financial applications, such as those used for municipal libraries, and the configuration of communication links (for example, protocols, encryption and authentication).

## **OBSERVATIONS AND RECOMMENDATIONS**

Today's IT systems play a vital role in an organization's internal controls. Because of internal (intranet) and external (Internet) networks, the number of potential users who can access data has grown considerably. This means that there are also many more threats facing computer systems.

Although Internet connection does increase the risk of unauthorized access, it is necessary to point out that the vast majority of computer-related security breaches come from within an organization. And this does not include keying errors and risks stemming from the choice of technologies. The dangers are many (hacking, viruses, electronic eavesdropping, etc.) as are the possible negative impacts: theft, destruction, changes in stored or circulated data, disclosure of confidential information, viral corruption, deteriorating system performance and service interruptions or application downtime.

Controls must be in place to ensure, among other things, that existing staff and procedures are sufficient to maintain an acceptable level of data integrity and security, that computer equipment is protected against loss, damage and theft, that user codes are managed in such a way as to prevent errors, unauthorized access and malicious acts, that the use of modems is restricted in order to adequately protect network resources and that, in the event of accidental destruction or another problem, software and data can be recovered and operational continuity restored within a reasonable time frame.

Although the results of our audit reveal that, overall, general computer controls are adequate in the boroughs we examined, we did observe that certain key controls were not in place. At the end of our audit, a letter was sent to the borough directors concerning internal control. Subsequently, all the boroughs except two forwarded us a detailed action plan designed to strengthen internal controls according to a specific schedule.

Following is a summary of the most frequent observations noted in the boroughs.

### **Mission, roles and responsibilities**

When their mission, strategic directions, objectives, roles, responsibilities and planning of activities are formally defined and disseminated, IT teams are able to have a consistent outlook on the objectives to be achieved.

We observed that, generally speaking, the IT-related mission and strategic directions have not been formally set out in the boroughs. In certain cases, the definition of roles and responsibilities is not up to date.

The mission, strategic directions and roles and responsibilities may therefore be subject to differing interpretations. As a result, actions may not be focussed on the proper priorities and may not satisfy the needs of users.

## **Recommendation**

**We recommend that the boroughs, in collaboration with the Direction des technologies de l'information (DTI), define, approve and disseminate the IT-related mission and strategic directions and update the definition of the roles and responsibilities of the various people involved.**

### ***Actions proposed by the boroughs***

*One borough forwarded us a copy of its mission and the roles and responsibilities of its IT department. Another borough indicated to us that it had taken steps in response to our recommendation. A third mentioned that representatives of some boroughs and the DTI met to “clarify the roles and responsibilities of the DTI and the suburban boroughs. . . . It is now up to the management of the Ville de Montréal to name someone to bring this project to fruition in collaboration with all those involved.”*

## **IT service agreements**

IT service agreements with external firms must be documented and supported by up-to-date contracts, as well as specify the level of services and protection provided. These agreements may include, as required, provisions that make it possible to obtain an opinion on the control procedures at a service organization, as specified in Chapter 5900 of the *CICA Handbook*.

We ascertained that, in half of the boroughs audited, technical support provided by external firms was not governed by duly signed agreements, nor did the agreements contain any provisions in respect to confidentiality. In addition, in every case where the boroughs did not have any IT staff, the controls outsourced to certain firms were not covered by the audit. These firms are involved, to varying degrees, in critical activities such as those related to backup strategies, the management of user codes and program modifications.

The boroughs therefore lack a tool enabling them to ensure that they have access to the desired level of service and protection. In the case of damages resulting from the disclosure or the non-availability of information, their legal recourse would be limited. Internal controls provided by an outside party could also be deficient, absent or prejudicial to the boroughs.

## **Recommendation**

**We recommend that the boroughs take the necessary steps to ensure that:**

- **IT service agreements with outside firms are backed by duly signed, up-to-date contracts specifying, among other things, the level of service and protection provided and containing a confidentiality clause;**
- **all agreements include a provision stipulating that controls exercised by an outside firm are subject to audit.**

### ***Actions proposed by the boroughs***

*Generally, the boroughs informed us that they had taken steps in response to our recommendation. New agreements will be in effect in 2005.*

## **Supervision of high-risk activities**

An independent resource person must be designated to monitor high-risk activities such as program modifications, backup strategies (including the physical protection of backup media) and telecommunications-related activities (including remote access and management of user codes), in order to ensure that all changes and actions respect prevailing directives and the needs of the boroughs. Furthermore, the administrative functions of computer systems must be kept separate from financial management operations.

In one third of the boroughs audited, there was no independent resource person assigned to validating and monitoring high-risk activities. It was observed that, in some boroughs, program modification activities were not overseen by an independent supervisor. In another case, the borough did not have enough in-house staff to delegate system administration tasks to individuals who were not involved in financial transactions.

Although, overall, the results of the audit show that these activities are adequate, the actions undertaken may prove to be in violation of directives or insufficient in meeting the needs of the boroughs. This could, in turn, lead to weaknesses in terms of general security, including unauthorized

access, violations of confidentiality, downtime and data corruption or loss. In a context where responsibilities are concentrated, management cannot effectively ensure that the changes made have been authorized.

### **Recommendation**

**We recommend that an independent resource person be assigned to validating high-risk activities in order to ensure that they respect prevailing directives. The frequency of validation must be determined according to each activity's level of risk.**

### ***Actions proposed by the boroughs***

*Some boroughs mentioned that, during 2005 they have implemented, or will be implementing, the mechanisms required to allow an independent resource person to validate high-risk activities in order to ensure prevailing directives are respected and that their needs are being fulfilled.*

*One borough opted to transfer all IT management tasks to a neighbouring borough in 2005.*

### **Physical security and IT environment**

Access to server rooms must be limited to authorized personnel. These facilities must always remain closed and locked, they must not have any windows permitting visual access from outside or inside the building and they must serve primarily to house and operate computer servers.

We noted that, in three quarters of the boroughs audited, improvements in physical security were required. In many cases, the rooms housing the main servers were not consistently closed or locked during the day. They are therefore accessible to all personnel working within the building. Moreover, when there are combination door locks, the combinations are not periodically changed. In certain boroughs, the server room had an outside-facing window, making it visible to all passers-by. In some locations, the room also contains printers used to produce financial reports, piping or stationery supplies. In some cases, these rooms are located in the basements of municipal buildings.



Unauthorized staff could gain access to computer equipment, including the server, and deliberately or inadvertently do something that could compromise data security or accessibility. Depending on the particular situation, various incidents (for example, pipe breaks, sewer backups) could also have a similarly detrimental effect.

### **Recommendation**

**We recommend that boroughs pursue their efforts to improve the physical security of the computer environment and apply the controls specified in Ville de Montréal standards.**

### ***Actions proposed by the boroughs***

*Overall, the boroughs told us that they had taken certain measures to improve the physical security of such premises, taking into account the level of risk involved and the resources available to them. Improvements were already being made or would be made following a more in-depth analysis of the situation in 2005.*

### **Logical security**

A policy and its supporting frameworks must clearly define what is required in terms of conduct as it relates to security and access, while at the same time taking into account the nature of the information involved. A security policy and its supporting frameworks must establish the objectives (what needs to be protected), procedures (the means of protection) and a suitable organizational structure. The management of user codes and other activities must be structured in a way that protects against errors and malicious acts. Users must have access only to the functionalities and data required to do their work. To ensure that this is the case, user access codes must be reviewed on a regular basis by the relevant manager. A record of successful and failed logins must also be kept for a reasonable amount of time and analysed periodically.

Users' actions must be more closely monitored in all of the boroughs audited, except in one borough where logical security is satisfactory. In addition, user codes and passwords management is weak.

Generally, there are no existing security or monitoring policies on the management of, for example, user codes, regular password changes, and the non-disclosure of passwords. In certain boroughs, user passwords are disclosed or kept in a list used for internal management purposes. In the majority of cases, because of the way the system is configured, users cannot change their password. The passwords never expire and can remain unchanged from when they were first created. In the boroughs where there was a report produced by the system, it was observed that roughly half of users had not changed their password in over a year or, in the case of one borough, more than four years, or even 10 for some users. Some of these users had high-level access (for example, programming or payroll). It is also worth pointing out that the minimal length of the password is not sufficient in the audited boroughs. Some can be as short as two or four characters, making them too easy to discover.

Furthermore, users' access rights are not reviewed periodically by someone in authority. In general, there are no formal mechanisms in place to cancel access codes when an employee leaves the organization. We observed that, on average, a third of the access codes examined were not justifiable, frequently because the person was no longer employed by the borough. In general, access codes granted to those working outside the organization are not programmed with any expiry date. Access codes are not assigned to a specific individual and may be shared by several employees, sometimes even when dealing with critical applications such as payroll. The activities of users who have privileges that enable them to bypass security measures are not monitored by someone in authority. For example, the activities of system administrators, some of whom are responsible for financial data, are not logged on a daily basis.

Over time, passwords can become known to other users and identities can be appropriated. Unauthorized individuals may access or attempt to access the system without the knowledge of the boroughs or users. People with overly liberal access to these systems could do something, either intentionally or unintentionally, to damage the system without being aware of the consequences of their actions. This could have an impact on operations, and it would be difficult to identify who was actually responsible.

The lack of a clearly defined policy and supporting framework means that IT employees are not able to intervene in an optimal fashion to ensure the availability of services, the confidentiality of information or the integrity of data.

## Recommendation

We recommend that, among other things, the concerned boroughs:

- in conjunction with the DTI, develop, disseminate or improve their security policy and its supporting frameworks;
- apply the appropriate security parameters with respect to access to servers, software and applications (for example, expiry dates for user codes, minimum length for passwords, maximum number of failed logins);
- adopt measures designed to put a stop to the systematic disclosure of passwords, which must remain confidential, and to ensure that users can change their password in the event of a perceived breach of confidentiality;
- ensure that users' access is limited to the functionalities and data related to their work, by changing or deleting unwarranted access codes or privileges after any staffing changes;
- implement a procedure so that users each have their own user code and so that all staffing changes are accompanied by a notice to update access codes or privileges;
- limit how long access is granted, particularly when it comes to external users;
- ensure that a record of successful and unsuccessful logins be kept for a specified period of time and be subject to regular examination, and that activities of users with privileges that allow them to bypass security measures be monitored by someone in authority.

(In the case of improvements to make to the financial systems that are slated to be replaced under the integrated management system initiative (SIMON), we recommend waiting until the new system is in place before undertaking any additional efforts.)

### *Actions proposed by the boroughs*

*Most of the boroughs have resolved to address the identified problems before 2006.*

*In keeping with this commitment, seven boroughs have proposed to develop, disseminate or strengthen their security policy or implement a mechanism that will obligate regular password changes. An eighth*

*borough indicated that a new security policy had already been implemented and was being tracked thoroughly. A ninth borough foresees, over the long term, mandating a system administrator from another borough to re-evaluate the issue and propose solutions. The other boroughs concerned did not respond.*

*It is worth noting that an information security management committee of the Ville de Montréal, whose members include representatives of boroughs created from the former suburban municipalities and the Direction des technologies de l'information, has been set up. The topics discussed at the meetings of this committee deal mainly with drafts of policies and supporting frameworks related to data security.*

*With respect to the management of user codes, in seven boroughs, access codes and privileges for all users were reviewed. An examination of the list of access privileges and an analysis of the menus for each user will be carried out in order to eliminate non-required functionalities. In addition, seven of the concerned boroughs (not necessarily the same seven) intend to implement a procedure wherein all staff departures or transfers trigger a review of access privileges. In two of the five boroughs concerned, a record of successful and unsuccessful system logins will be set up and, depending on the existing computer system, kept for a reasonable period of time or periodically reviewed.*

### **Program modifications**

A record of program modifications must be kept in order to indicate the date of the change, the name of the person who made it, what it entailed, how it was implemented and other key details.

In one borough, there are no records to track program modifications or tools to manage modification requests. In another borough, there is no documentation or log kept on how such changes are implemented.

Inadequate implementation can lead to problems in the network or applications. If these problems occur several days after implementation or if there are unauthorized changes made to programs, the boroughs will not be in a position to track what led up to the occurrence in order to help make the appropriate corrections.

## **Recommendation**

**We recommend that the boroughs keep a record of all program modifications, and document and log all implementations.**

### ***Actions proposed by the boroughs***

*In one borough, "a record of program modifications, with proof of approval of the changes and test results," is planned. A second borough responded that "since April 2004, all requests for changes to the various systems are submitted using a specific form." According to this borough, the form will make it possible "to fully understand the client's needs, the underlying rationale, the impact if the request is not fulfilled, the possible alternatives, the costs and the time frame involved, the possible outcomes of the deliverables and the approval of the person making the request and the one executing it."*

## **Telecommunications, including remote access**

All network connections must be secure, controlled and monitored. The use of modems in the borough, in particular, must be closely scrutinized. For example, modems should be disconnected when not in use.

In one borough, there are a number of external and internal links whose use is not monitored. In addition, in nearly half of the boroughs, modem usage is uncontrolled. And none of the boroughs have issued a directive pertaining to remote access.

Any uncontrolled or unmonitored access, be it incoming or outgoing, increases the risk of unauthorized access to data. An unauthorized person could infiltrate a borough's critical applications and cause damage that could affect the availability of equipment or applications, as well as compromise data accuracy and integrity.

## **Recommendation**

**We recommend that the boroughs implement a mechanism to monitor and control incoming and outgoing network access, especially as it pertains to the use of modems, and draft a directive on remote access.**

### ***Actions proposed by the boroughs***

*In two boroughs, a directive on remote access will be drafted before 2006. In one of the two, an initiative will be undertaken with the Direction des technologies de l'information to explore the various possibilities in terms of the control, verification and monitoring of access to the network. In the other borough, a log of firewall activity will be reviewed monthly by someone in authority. In a third borough, a written policy on the control of the use of modems will be drafted and implemented and someone will be put in charge of overseeing the policy. During the course of 2005, a fourth borough plans to find a system administrator to identify various control solutions for a modem-based remote control communications software. A fifth borough informed us that its modems had been disconnected and that a mechanism was in place to control their use.*

## **Backup strategy, including physical protection of backup media**

Backup copies should be sent to a safe off-site location within a reasonable amount of time after they have been made. Moreover, recovery tests should be carried out regularly on these backup copies.

In half of the boroughs audited, daily backups are kept in the same building where the servers are located. In certain cases, access to the server location is available to anyone with access to the building.

In five boroughs, copies of backup files are recovered as necessary. However, recovery tests on the backup copies are not performed on a regular basis.

If a backup copy is compromised because of a defective medium, the software and data in question will not be protected in the event of inadvertent destruction or any other incident. Should a major disaster strike, the software and data concerned may be unrecoverable.

## **Recommendation**

### **We recommend that the boroughs:**

- **keep backup copies in a safe off-site location and that they be sent to this location within a reasonable amount of time following the making of these copies;**
- **carry out recovery tests on a regular basis.**

### ***Actions proposed by the boroughs***

*Since the audit, cassettes containing backups have been stored at a location other than the building where the servers are located. During the course of 2005, four boroughs will have taken steps in response to our concerns about this matter. The management of a fifth borough decided not to heed our recommendation and to assume the corresponding risk.*

*In addition, four boroughs (not necessarily the same four) plan to carry out regular recovery tests on their backup copies.*

*One of the boroughs to which these observations apply has not yet responded.*

## **Contingency and continuity plan**

A corporate contingency plan helps protect an organization against interruptions in its operations caused by major disasters, such as fires, floods and earthquakes. In this case, a contingency plan that can promote operational continuity must be in place including:

- possible scenarios;
- escalation procedure for emergency calls;
- procedures to fully recover servers;
- procedures to operate servers;
- procedures to recover applications;
- main responsibilities of all parties;
- hardware components and core software;
- required recovery time frames.

A continuity plan for short-term interruptions must also be documented and kept up to date.

None of the 12 boroughs has a contingency plan in place. Furthermore, nearly three quarters of them do not have a formal continuity plan.

The lack of a formal continuity plan could cause delays in the recovery process as well as prioritization problems, which could in turn lead to interruptions in internal services for residents. In the event of a major disaster, operational continuity could be so seriously affected that there would be repercussions at the financial and operational level.

### **Recommendations**

**We recommend that the boroughs prepare a contingency and continuity plan in order to respond to the requirements related to operational continuity in the event of a major disaster or a short-term interruption in service.**

**The contingency plan should normally be tested and updated every year. It should be stored in a safe place, other than the building where the servers are located, and it should be known to and approved by management.**

**The continuity plan should be communicated to the key stakeholders, be available in a form that does not require the availability of the concerned server to be read, and stored in a specific site known to them.**

### ***Actions proposed by the boroughs***

*The majority of boroughs plan to have a contingency plan in place by 2006. In addition, the implementation of the integrated management system project (SIMON) should enable them to obtain some of the support they need in this respect.*

*With respect to equipment breakdowns and short-term interruptions, depending on the case, a continuity plan is already in place or is in development.*



## **Antivirus programs**

Depending on the technological platform and the presence of computer viruses on this type of platform, servers, work stations and other hardware must be protected against viruses, either by way of an antivirus service, software program or filter. The program solution (scan engine) and the corresponding virus definition file must be updated frequently to ensure that all hardware is protected against viruses and to avoid downtime and data loss. It is recommended that these updates be programmed to run automatically.

In two boroughs, we noted that users were manually updating their virus protection system on their work station, after being prompted to do so by a periodically issued reminder. However, it is entirely uncertain whether all the computers and other equipment are protected by an up-to-date antivirus program. These boroughs can have anywhere from 140 to 300 work stations.

Downtime and data loss may occur following a virus attack. Although this observation concerns only a small number of boroughs, a virus could end up contaminating successive work stations within the organization.

## **Recommendation**

**We recommend that the boroughs implement automatic update procedures for their antivirus programs.**

## ***Actions proposed by the boroughs***

*One borough mentioned that antivirus program updates are currently launched automatically for each of the computers connected to its network. A second borough plans to implement an automated antivirus software update procedure. The purchase of an additional server and a new software program is planned in 2005.*

## **OVERVIEW OF DATA WAREHOUSES**

### **BACKGROUND**

In order to facilitate access to financial data and employees' personal information at the Ville de Montréal, certain departments have created data warehouses that can be accessed via office technology software programs or applications. These warehouses are designed for analyses and queries rather than to carry out transactions.

Warehouses contain data taken mainly from "corporate" applications of certain departments which reside on the central IBM server, and similar applications from the boroughs created from the former suburban municipalities. The information found in the data warehouses is used primarily for decision-making purposes in financial and human resources management matters. In addition, the human resources data warehouse (Inforh) contains nominative information about Ville de Montréal employees.

The information in the data warehouses is contained within a database. A database is a structured set of interrelated files in which information is organized according to various criteria.

The databases that we audited reside on a server that also houses databases other than the ones covered by our audit. The data warehouses can be accessed by different users in various central departments, as well as in the boroughs.

With respect to the network architecture, the server is located in a private, secure, firewall-controlled segment. This layer of protection means that any query sent to the server must first pass through the firewall before being transferred to the server.

The "global" management of warehouse databases, or the "container," is the responsibility of the Division des technologies of the Direction des technologies de l'information (DTI) of the Service des services administratifs. "Local" management of warehouse databases falls to the Division des applications–Domaines corporatifs of the DTI, whose personnel work within each of the proprietary departments. Local management focusses on "content," or everything that relates to the data stored in the warehouses.

## METHODOLOGY AND SCOPE

We audited two data warehouses at the Ville de Montréal: one for the financial data of the Service des finances and the other for human resources data (Inforh) of the Gestion stratégique, du capital humain et de la diversité ethnoculturelle (GSCHDE). Our mandate was to examine the general computer controls in place and to verify that they ensure the integrity, the availability and the confidentiality of data in addition to abiding by, in the case of Inforh, the *Act Respecting Access to Documents Held by Public Bodies and the Protection of Personal Information* (R.S.Q., chapter A-2.1) (the Act).

The standards and policies of the Ville de Montréal and industry best practices served as evaluation criteria in this regard.

Our audit work, which was carried out in the last quarter of 2003 for the financial data warehouse and between the months of September and November 2004 for the human resources data warehouse, focussed on the following aspects:

- physical security and computer environment;
- logical security of the operating system and databases;
- logical security of the Inforh application;
- interfaces;
- remote access;
- backup strategy;
- continuity and contingency plans;
- protection of personal information.

In February 2004, we issued an audit report on the financial data warehouse used by the Service des finances. An action plan was subsequently submitted to us by the managers involved. A second report on the Inforh data warehouse was released in December 2004. Given that the two warehouses use the same computer environment, certain elements of the mandate addressing the second warehouse, including the physical and logical security of the server, the logical security of the operating system and the backup strategy, were not re-examined. In addition, penetration tests were also carried out on the server supporting these data warehouses. These tests revealed the existence of certain weaknesses in terms of security. They were included in an audit report on computer security at the Ville de Montréal.

We also suggested to the concerned departments that our recommendations be applied to all similar environments within the organization.

Finally, a number of recommendations identified in this report were shared with the team responsible for the human resources and payroll components of the Simon integrated management system so that adequate controls could be introduced from the onset of the project.

## OBSERVATIONS AND RECOMMENDATIONS

The results of our audit revealed that some of the controls in place were adequate, namely:

- the location of the server in a secure, private, firewall-controlled segment;
- the disconnection of the server's modem link (during the audit);
- the server backup strategy, which includes all resident databases;
- the decentralized management approach adopted by the DTI, which favours a separation of tasks in terms of database administration for the financial data warehouse;
- the interfaces that enable adequate data transfer between the central IBM server and the financial data warehouse.

However, during the course of our work, we also detected certain weaknesses that require remedial action. In order to make the observations in this report as clear as possible, we have grouped them together according to general themes, as follows:

Area	Main Focus
Governance	Gaps in terms of security and protection of personal information
Firewall	Rules controlling server access, including remote access
Server security	Logical security and continuity/contingency plans
Databases — DTI	Logical security
Inforh application and financial data warehouse	Logical security of the application, management of user access and protection of personal information

## Governance

The result of our audit of the Inforh data warehouse revealed that most of the corrective measures recommended in the report on the financial data warehouse had not yet been implemented, more than six months after it had been presented to municipal authorities. Some of the weaknesses addressed involved data security, completeness, accuracy and availability.

To reduce future development costs, it would be preferable to establish all the data collection, access, storage and destruction parameters during the design phase of applications, so that they would comply with all prevailing laws, by-laws and regulations, especially in respect to the protection of personal information.

Many application development projects are under way at the Ville de Montréal (for example, the Simon integrated management system, the Sésame pension fund system and the e-Cité on-line government system). Some of these applications involve access to nominative information. The Direction du greffe, the entity responsible for the application of the Act, does not formally participate in all development projects of this nature. The result of this can be a lack within the Ville de Montréal's policies and standards with respect to the protection of personal information and, subsequently, the need to develop various remedial applications.

In addition, in relation to the protection of personal information, the Act mentions that a public body must:

- include all the nominative information it has in a personal information file;
- ensure that access to this information is restricted to duly authorized individuals;
- destroy all nominative information when it no longer serves a useful purpose, subject to the application of the *Archives Act*.

In order to be able to manage the application of this Act, the Ville de Montréal must issue policies, standards and directives. We were informed that the former Ville de Montréal had implemented a framework of this nature pertaining to documents in paper format, which it continued to apply after the municipal amalgamation on January 1, 2002. However, no such framework has since been implemented for the new Ville de Montréal. In particular, there is nothing in place regarding the management of electronic files containing information of a personal nature. The Ville de Montréal therefore does not possess all the controls enabling it to ensure compliance with the Act.

## Recommendations

We recommend that the Service des services administratifs:

- implement a procedure in order to rapidly address the security lapses observed by various stakeholders;
- apply corrective measures to all the informational assets at the Ville de Montréal whose problems were identified in the audit report on the financial data warehouse of the Service des finances.

We recommend that entities using in-house applications, including the Direction de la GSCHDE, involve the Direction du greffe of the Service des affaires corporatives in all application development projects dealing with nominative information so that the Direction du greffe can issue decisions and guide stakeholders with respect to all questions related to the protection of personal information.

In addition, we recommend that the Direction du greffe of the Service des affaires corporatives:

- issue updated policies, standards and directives as quickly as possible in order to provide guidelines concerning data collection, access, storage and destruction as it pertains to personal information within the organization;
- disseminate information and increase staff awareness about these new policies, standards and directives.

## Actions proposed by the departments

*“A procedure to follow up on recommendations issued by the General Auditor is in the preparation stages. A person reporting to the Division de la planification stratégique of the DTI will be assigned to this task.” (Completed).*

*“The Service des services administratifs has noted these recommendations. However, it is important to point out that a number of security-related actions have already taken place . . . .” The other actions are slated to be implemented in **December 2005**.*

*“. . . From now on, the Service de la GSCHDE will inform the Direction du greffe of all IT development work on its information systems . . . .” (Planned completion: **September 2005**)*

*“Bill 86, introduced at the National Assembly in December 2004, proposed that the government enact a policy on the protection of personal information that public bodies must adopt and implement. The Direction du greffe will have to take into account the policy developed by the Government of Québec and must therefore wait until a regulation is issued in this respect . . . . The personal information protection policy will be adopted in the Ville de Montréal . . . . Notwithstanding, the Direction du greffe continues to be vigilant with respect to intervening in critical situations.” (Planned completion: year 2006)*

## **Firewall**

A firewall is a protective mechanism whose effectiveness depends on how well its access rules are defined and supported.

Following are our observations in this respect:

- there is no formal request system or official form to record, authorize and validate requests to create or modify rules, although notes are entered, albeit unsystematically, in a specially designed section of the software to explain the reasons behind these rules;
- access rules are not reviewed on a regular basis;
- there are no set schedules to review the rules.

In the absence of a formal authorization process, it is possible for access to be granted without the consent of the informational asset owner. In addition, the absence of a review of each rule could result in the rules becoming redundant, erroneous or obsolete, but still staying in place and affecting the security of the resources they are intended to protect.

The creation of groups has made it easier to manage user access. These groups generally contain a list of user codes. However, following an analysis of the firewall rules, we concluded that all access is granted to users based on their work station address, regardless of whether or not they belong to a group. In this respect, the analysis of the access rules granted to the ADMIN group (responsible for server management and general database management) and the SUPPORT group (responsible for local database management) has led us to realize the following:

- addresses could not be matched up with a specific individual;

- authorized addresses were identified as a “dynamic field,” i.e., these addresses can be attributed to anyone who works in the building and who requires an address;
- users possess more than one address.

Given the significant user privileges bestowed upon these groups, an unauthorized person could be given a dynamic address or succeed in accessing one of the addresses of the groups and thereby secure the corresponding rights.

The analysis of these rules has also shown us that there is a rule in place that allows remote access to a select number of developers. These developers support one of the resident applications on the server. However, in so implementing this rule, access was also granted to all the users in nine boroughs. An unauthorized user could therefore exploit this privilege to attempt to access the server.

We also observed that there is a rule that gives FTP (file transfer protocol, which allows files to be transferred between two computers) access to all users of the server. The employee responsible for this could not explain the rationale behind this rule nor identify the person who had authorized it. In order to verify the vulnerability of this rule, we carried out a test using the FTP user code for an application. The result was conclusive: we were able to connect to the server. As a result, we had access to information files that we could modify or delete without holding any special privileges. An unauthorized person could have tried to gain FTP access to the server in the same way.

In order to connect all the users in the boroughs created from the former suburban municipalities, the former Communauté urbaine de Montréal (CUM) and the boroughs of the former Ville de Montréal, the DTI established a network link known as the “Réseau métropolitain.” Using this link, all employees from the boroughs and the former CUM have access to the unified network. Given the tight time frame that the DTI had to contend with, it was decided to assign generic “temporary” user codes, on the basis of one code per borough, to grant access to the Réseau métropolitain. However, we ascertained that, two years later, the “temporary” generic codes are still widely used. Our work also showed that, regardless of the borough of origin, it is possible to use any of the borough codes to connect to the Réseau métropolitain, since there is no validation process in place. In addition, it is impossible for those responsible for firewall management to determine the exact source of a login. Finally, we observed that



the generic codes and their passwords are easy to find. The use of generic user codes means that logins are not managed according to the principle of identification and authentication. Under this principle, users must identify themselves with a personalized user code and authenticate it with a secret password. In this case, authorization for connection to the server is granted to users providing specific identification information (personalized user code), rather than a generic user code.

## **Recommendations**

**We recommend that the Service des services administratifs:**

- **set up a formal request system to obtain the prior consent of an informational asset owner before access to an informational asset is granted and to validate requests to create or update rules;**
- **introduce a control that makes it possible to ensure that access rules are reviewed on a regular basis;**
- **review the rules and implement controls based on user codes rather than on work station addresses, as far as firewall rules are concerned;**
- **delete the rule granting FTP access to all users;**
- **replace generic Réseau métropolitain user codes with personalized user codes.**

### ***Actions proposed by the Service des services administratifs***

*“The procedure controlling access to informational assets will be included in an identity management system . . . . In the meantime, . . . formal requests for access will have to be addressed to the proper authorities by way of a message on Lotus Notes from the informational asset owner or a designated representative. A quarterly review will be set up . . . .” (Planned completion: December 2005)*

*“. . . . With respect to firewall rules, the DTI will introduce login control measures based on the user codes of each of the members of the ADMIN group, . . . of the SUPPORT group, rather than their work station addresses.” (Planned completion: December 2005)*

*“Login security . . . will be provided by ensuring the rigorous respect of the rules that dictate that access rights may be granted only to designated users . . . .” (Planned completion: December 2005)*

*“The rule that allows FTP access to all users was suspended and deleted, in keeping with the recommendation.” (Completed)*

*“ . . . The DTI has already initiated a project to integrate those users in the boroughs who are currently members of the unified network into the Réseau métropolitain. Personalized user codes will be distributed, with one sequence for each borough. The procedure managing access to informational assets will be defined in the identity management project . . . ” (Planned completion: December 2005)*

### **Server security and availability**

The responsibility for production work related to the server, which is normally assumed by a group responsible for Production, has been entrusted to the applications co-ordinators. We observed that the applications co-ordinators have unrestricted access to the server's operating system, even to the extent that they have access to all server maintenance tools and utilities. This runs counter to recognized industry practices. The unauthorized use of tools and utilities could jeopardize the security and availability of the server. In addition, someone could deliberately use these tools or utilities to try and exploit potential security weaknesses in other servers located in the same secure segment as the server that we audited.

We also noted that the co-ordinators in charge of server operations connect with the server using a terminal emulation protocol that is not secure. Consequently, an ill-intentioned user could intercept the communication between a co-ordinator work station and the server, find out the password for a user account with high-level privileges (i.e., an “Administrator” account) and thus gain access to the server and corresponding data.

In terms of creating user codes, there are no standardized forms or procedures to monitor access to the server. The co-ordinators in charge of server operations manage user codes in an informal and inconsistent manner. There are no login management processes or applications used, as is the case for the central IBM server, which is equipped with the DASI (Demande d'Accès aux Systèmes Informatisés) application. Under the existing procedure, the responsibility for granting access to data falls to the co-ordinator in charge of server operations rather than the owner of the informational asset. This is not consistent with the “Directives d'encadrement de la gestion des accès aux ressources informatiques.”

We were informed that there are no regular reviews conducted to ensure that user rights are mandatory and compliant and that user codes are all “active,” i.e., used on a regular basis. An unauthorized individual could therefore attempt to procure an “inactive” user code following the departure of an employee, for example. In addition, users who are transferred from one department to another maintain the same rights and privileges, even though in some cases they are no longer required.

With respect to general control settings related to server operations, the results of our audit show that:

- the inactivity shutdown function was not activated. This function disconnects a communication link if it has not been in use for a predetermined amount of time. However, because this setting has no effect on “Administrator” user codes, we noticed that no local processes are activated on the work stations of the co-ordinators in charge of server operations in order to prevent access to their work stations when they are unattended;
- no warning messages appear on screen during the login procedure to indicate the access has been granted for municipal business only and that any illegal action is subject to legal remedy.

An unauthorized user could take advantage of the absence of an authorized user to appropriate that individual’s rights and privileges. Furthermore, in the absence of a warning message, an unauthorized party could always claim that nothing indicated that access was granted solely for the purposes of municipal business.

The “Norme fixant les exigences de la sécurité physique et logique des serveurs” establishes the minimum internal standards to be respected in order to ensure the physical and logical security of computer servers and requires these standards to be documented for the purpose of ensuring their ongoing availability. To provide an example, such documentation must include:

- descriptions of hardware and software components, as well as the specifications for their configuration;
- procedures and instructions necessary to restart the server.

With respect to this standard, we observed or were informed of the following:

- only two of the 45 user codes are subject to a forced password change after 30 days;
- there were no automated mechanisms in place to invalidate a user code after three or more unsuccessful login attempts;
- no documentation exists.

As a result, an unauthorized person could attempt to infiltrate and even successfully break into the system for illicit purposes. In addition, in the absence of documentation, the availability of the server depends directly on the human resources generally assigned to its operation.

One of the ways to protect against security loopholes targeted by malicious programs such as viruses is to ensure that the operating system is updated on a regular basis. A visit to the developer of the operating system's Web site indicated that updates are released frequently, many of which are security patches. However, we observed that these updates were not downloaded regularly and that the most recent updates installed dated back to May 2002. Without these regular system updates, especially those relating to security, the server becomes more vulnerable.

Finally, there is no continuity plan in the event of any type of computer downtime or recovery plan designed to transfer operations to an alternate site following damage to or destruction of IT resources due to a major incident. This is not consistent with the "Norme fixant les exigences de la sécurité physique et logique des serveurs." In the absence of a formal continuity plan, it is possible that certain procedures, instructions or guidelines be overlooked, thereby precluding the availability of the means necessary to reinstate IT systems following a disruption. Furthermore, in the absence of an IT contingency plan, operational continuity could be compromised in the event of a major incident.

## **Recommendations**

**We recommend that the Service des services administratifs:**

- **limit applications co-ordinators' access to the server operating system and discontinue their access to tools and utilities;**
- **use a set of secure tools to enable the co-ordinators in charge of server operations to obtain a secure connection with the server;**
- **comply with the "Directives d'encadrement de la gestion des accès aux ressources informatiques" in respect to how access rights are granted by the informational asset owner;**
- **use the DASI application to manage server logins;**
- **establish a procedure to review user codes on a regular basis (i.e., at least once a year);**

- activate the general settings that control the period of inactivity required to initiate shutdown and display an on-screen notice during the login procedure;
- ensure that a local procedure exists to block the use of unattended work stations belonging to the co-ordinators in charge of server operations;
- abide by the “Norme fixant les exigences de la sécurité physique et logique des serveurs” with respect to such issues as the following:
  - mandatory expiration of passwords after a given period of time and automatic invalidation of user codes after three unsuccessful login attempts;
  - server documentation;
- ensure that updates and patches, especially those relating to security, are tested and applied on a regular basis;

In addition, we recommend that the Service des services administratifs, in collaboration with the respective departments responsible for databases:

- proceed with the development of a continuity plan that will outline the stopgap and remedial measures that must be taken to ensure the continuity of server operations;
- prepare a contingency plan and update and test it yearly, in keeping with the “Norme fixant les exigences de la sécurité physique et logique des serveurs.”

***Actions proposed by the Service des services administratifs***

*“The prerequisite condition to limiting user access . . . is the migration to a more advanced version of the server operating system . . . . Given the numerous applications that reside on this server, an operation of this nature involves some serious risks . . . . One possibility would be to acquire a “scheduling” tool . . . . An evaluation of the costs to test . . . such a product will be carried out . . . . In the meantime, a reminder concerning the strictness required when using the tools concerned will be sent to all those authorized to use them . . . .” (Planned completion: December 2005)*

*“Other products and methods to access the server . . . in a secure manner . . . are currently being assessed by the co-ordinators. The conclusions of these tests and analyses, as well as the decisions made, will be conveyed to the General Auditor Office . . . .” (Planned completion: December 2005)*

*“The DTI intends to comply with the planned directives and will implement a procedure on the use of the DASI application to manage logins . . . .” (Completed)*

*“The DTI plans to implement a yearly review of user codes . . . . The identity management project . . . should, when completed, make it possible to effectively and continuously manage all critical aspects related to user codes.” (Planned completion: December 2005)*

*“The DTI has activated the general settings concerning periods of inactivity . . . .” (Completed)*

*“A local procedure blocking access to and the operation of the work stations of the co-ordinators in charge of server operations has . . . been implemented. The system has also been programmed to display a reminder of user access rules . . . .” (Completed)*

*“The DTI plans to apply the rule to force password changes every 30 days for all user codes . . . .” (Completed)*

*“. . . The DTI will produce the required documentation . . . .” (Planned completion: December 2005)*

*“. . . The co-ordinators in charge of managing servers will be more vigilant when it comes to the availability of new updates and patches and, as required, will install them in the systems.” (Planned completion: December 2005)*

*“. . . The DTI . . . intends to continue working on the development of a formal continuity plan.” (Planned completion: June 2005)*

*“. . . The DTI is committed to developing a formal contingency plan.” (Planned completion: June 2005)*

#### **Databases—DTI**

In order to facilitate the management and administration of its product, the database provider supplies a number of user codes with high-level privileges to which a widely known “default” password is assigned. The results of our tests showed that three codes created by human resources database administrators are no longer used. An unauthorized person could therefore infiltrate the system for illicit purposes and thus affect data completeness, accuracy and availability. In each of the databases, the password associated with the user code, established by default by the provider, has not been changed. Moreover, the password associated with the user code employed to administer each of the databases we audited had not been changed for quite some time. In the case of the financial data warehouse, the most recent modification had been performed two years prior. The maximum period of validity of the password for

this code does not comply with the “Directives d'encadrement de la gestion des accès aux ressources informatiques,” which sets the maximum at 30 days. As a result, it is more likely that the password could be discovered and used to access a given data warehouse.

We were informed that the individuals responsible for providing user support for the Inforh application shared a user coder and password. In this case, in the event unauthorized changes were made, it would be impossible to determine who did so.

Also, under the current method of operation, the DTI assumes “corporate” administrator functions. In this capacity, the DTI sees to the installation of products from the database provider, proceeds with the creation of databases, manages and supervises general settings and makes the corresponding backups. User services staff, including the Service de la GSCHDE and Service des finances teams, have been designated “local” administrators. Accordingly, they create the necessary tables to fulfill these tasks, as well as create and manage user codes. In order to assume its role as a “corporate” database administrator, the DTI must be the only entity granted database administrator (DBA) privileges. We observed, however, that this privilege was given to user codes held by “local” administrators as well. In addition, one of these codes is assigned the privilege of defining and granting user access to the database. The decentralized management method adopted by the DTI, which promotes the separation of tasks in terms of data warehouse administration, is therefore no longer respected.

Finally, the “corporate” DBA is also in charge of ensuring that the general settings for controlling the passwords associated with the user codes are properly established. This includes:

- minimum length of the password;
- number of days between password changes;
- number of passwords that cannot be reused for password changes;
- grace period allowed for password changes.

Once these settings have been established, user codes created by “local” administrators will be automatically integrated into the general settings. We were nevertheless informed that the “corporate” administrator had not established any settings to control these passwords. This absence of password control hampers the ability to effectively manage access to the data warehouses, which is in violation of the “Directives d'encadrement de la gestion des accès aux ressources informatiques.”

## **Recommendations**

**We recommend that the Service des services administratifs:**

- delete or deactivate “default” user codes or codes that are no longer in use;
- review the list of database user codes and access privileges periodically (i.e., at least once a year) and whenever there is a staffing change in order to ensure that this situation does not reoccur;
- change the “default” password;
- comply with the “Directives d'encadrement de la gestion des accès aux ressources informatiques” with respect to such conditions as the mandatory expiration of passwords associated with user codes enabling the administration of informational assets (30 days);
- create the necessary user codes to ensure non-repudiation;
- limit DBA privileges to those individuals assigned to “corporate” administrator duties;
- ensure that the general settings controlling the passwords associated with user codes for the data warehouses comply with the “Directives d'encadrement de la gestion des accès aux ressources informatiques.”

### ***Actions proposed by the Service des services administratifs***

*“Unused codes with DBA privileges will be deactivated. [Other user] codes that remain unused after 180 days (with the agreement of the system co-ordinator) will be deactivated automatically.” (Planned completion: June 2005)*

*“An annual review of database logins by high-level users will be carried out in conjunction with the system co-ordinator.” (Planned completion: June 2005)*

*“The ‘default’ password has been changed. (Completed)*



*“Because there are more than 100 DBA user codes [the majority of which are programmed codes used for various queries] and password changes have to be done manually, we propose that these passwords be changed on a semi-annual basis.” (Planned completion: June 2005)*

*“A co-ordinator will be named to allocate high-priority codes.” (Planned completion: June 2005)*

*“... DBA privileges have been ... withdrawn from local user service administrators. These privileges will now be granted exclusively to those individuals who are ‘corporate’ administrators.” (Completed)*

*“... General settings will be applied when new user accounts are created ... The DTI will review and correct existing codes so that they comply with the specified directive.” (Planned completion: December 2005).*

#### **Inforh application and financial data warehouse**

Using the database provider’s products, user profiles can be created with a set of privileges (roles) that allow access rights to objects (views) and systems and, potentially, the creation of other roles. Two roles can limit access to certain information available within the application. The first makes it possible to access views related to the employee file and the second to payroll transactions. Employee files contain such information as date of birth, social insurance number (SIN) and yearly salary. The results of our tests show that there is no role that makes it possible to differentiate information that users can view in an employee file (SIN, date of birth, annual salary, etc.), even if some of these details are not essential to the purposes of their work. As a result, the system is in violation of the law. In addition, access granted within the Inforh application in no way takes into account access granted to users in the various source systems. Users can thus have access to personal information that they are not usually allowed to view because the profiles in the source applications are generally more restrictive.

Also, there is no regular review to ensure that users’ rights are assigned according to need and that the code is used on a regular basis. As a result, more than 11% of the 463 user codes in the Inforh system belonging to people who have been on long-term leave or transferred to another position had not been deactivated. Unauthorized individuals could therefore attempt to use one of these “inactive” user codes and access information that would ordinarily not be available to them. A similar situation was also observed during our audit of the financial data warehouse. Moreover, users who are transferred elsewhere generally maintain their rights and privileges, even if these are no longer required, unless

they make a request to change the situation. Additionally, there are no mechanisms limiting the duration of access to the application in the case of individuals who need access only for a limited period of time. This problem, like those stipulated earlier, can be exploited by certain users to access information that is not warranted in the normal course of their duties.

Finally, we were informed that the management of user codes, in the case of the financial data warehouse, was the responsibility of the local database administrator. Under the existing procedure, the responsibility for granting access to data does not belong to the owner of the informational asset, which does not comply with the “Directives d'encadrement de la gestion des accès aux ressources informatiques.” In addition, at the moment the rights were attributed, we observed that there was a complete lack of synchronization between the source applications and data warehouses. Consequently, users with no or restricted rights to a source application could, by way of the data warehouses, obtain access to data normally not available to them.

## **Recommendations**

**We recommend that the Direction de la gestion stratégique, du capital humain et de la diversité ethnoculturelle, in collaboration with the Service des services administratifs:**

- **determine the new access roles that limit the viewing of certain personal information;**
- **attribute roles to application users based on the information they require in the normal course of their duties;**
- **introduce control mechanisms that make it possible to:**
  - **deactivate user codes belonging to people who have left their jobs or are on long-term leave;**
  - **review the data accessible by users transferred to another unit;**

- establish a fixed expiration date for access to applications that is required only for a limited period;
- review the list of user codes and warehouse privileges periodically, i.e., at least once a year.

In addition, we recommend that the Service des services administratifs:

- comply with the “Directives d'encadrement de la gestion des accès aux ressources informatiques” with respect to access rights granted by the informational asset owner in the case of the financial data warehouse;
- use the DASI application to manage warehouse logins.

**Actions proposed by the departments**

*“In collaboration with the Direction du greffe and the Section du développement des systèmes, the Service de la GSCHDE is conducting an analysis of the application’s various [configuration] panels and reports . . . . This analysis will make it possible to create a new user profile, which will restrict the confidential and nominative information that can be viewed.” (Planned completion: September 2005)*

*“We will reconfigure access settings in collaboration with the borough managers and departments in order to provide all employees access to the application in accordance with the required profiles.” (Planned completion: September 2005)*

*“Certain controls have already been integrated into the application. Accounts are systematically deleted in the case of an employee departure and deactivated in the case of temporary leave.” (Completed)*

*“. . . The Service de la GSCHDE plans to validate user accounts in collaboration with the boroughs and the administrative departments twice a year, once near the end of April and again at the end of September.” (Completed)*

*“A list of ‘inactive’ users will be sent regularly to system co-ordinators so that they can update the system accordingly.” (Completed).*

*“Agree with the recommendations:*

- *granting and managing access rights will be the responsibility of the informational asset owner or the system co-ordinators who are assigned these tasks;*
- *a system interfaced with DASI that enables system co-ordinators to manage access has just been completed and delivered to them.” **(Completed)**.*

## **ACCESS TO INFORMATION**

We were able to consult all files, documents and records pertaining to the accounts and operations of the Ville de Montréal, as well as all paramunicipal corporations and municipal organizations. We were able to obtain the information, reports and explanations deemed necessary from all civil servants and employees.

This report contains comments received from municipal departments, paramunicipal corporations and municipal organizations before March 31, 2005 for the quasi-majority of observations and comments emanating from the audit.



## **APPENDIX**

Article 107 of the <i>Cities and Towns Act</i>	3
List of audit reports issued (statements or other financial information)	8
Employees of the General Auditor Office	10

### **VALUE FOR MONEY AUDITS FLOW CHART**

- Planning	12
- Auditing and report	13
- Annual report and flow-ups	14

### **GENERAL AUDITOR'S OFFICE REPORT ON EXPENSE ACCOUNTS**

Auditors' Report	
Schedule of expense accounts	





## **ARTICLE 107 OF THE CITIES AND TOWNS ACT**

### *IV.1. — Chief auditor*

- Chief auditor. 107.1. The council of every municipality having 100,000 inhabitants or more shall have an officer called the chief auditor.  
2001, c. 25, s. 15.
- Term. 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 term of seven years. The term may not be renewed.  
2001, c. 25, s. 15.
- Ineligibility. 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 or a legal person referred to in paragraph 2 of section 107.7.
- Disclosure of interest. 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.
- Inability or vacancy. 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.
- Expenses. 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.
- Amount of appropriation. Subject to the third paragraph, the appropriation must be equal to or greater than the product obtained by multiplying the total of the other appropriations provided for in the budget for operating expenses by  
1) 0.17 % where the total of those appropriations is less than \$100,000,000 ;  
2) 0.16 % where the total of those appropriations is at least \$100,000,000 and less than \$200,000,000 ;  
3) 0.15 % where the total of those appropriations is at least \$200,000,000 and less than \$400,000,000 ;  
4) 0.14 % where the total of those appropriations is at least \$400,000,000 and less than \$600,000,000 ;  
5) 0.13 % where the total of those appropriations is at least \$600,000,000 and less than \$800,000,000 ;

6) 0.12 % where the total of those appropriations is at least \$800,000,000 and less than \$1,000,000,000 ;

7) 0.11 % where the total of those appropriations is at least \$1,000,000,000.

Exception.

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.

Duties.

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, s. 15.

Duties.

107.7. The chief auditor shall audit the accounts and affairs

1) of the municipality ;

2) of every legal person in respect of which the municipality or a mandatary of the municipality holds more than 50 % of the outstanding shares or voting shares or appoints more than 50 % of the members of the board of directors.

2001, c. 25, s. 15.

Audit.

107.8. The audit of the affairs and accounts of the municipality and of any legal person referred to in paragraph 2 of section 107.7 comprises, 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.

Audit.

The audit must not call into question the merits of the policies and objectives of the municipality or legal persons referred to in paragraph 2 of section 107.7.

Documents and information.

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 referred to in paragraph 2 of section 107.7 all information, reports and explanations the chief auditor considers necessary.

2001, c. 25, s. 15; 2001, c. 68, s. 6.

Audit.

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.

Copy.

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.
Documents and information.	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.
Additional audit.	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.
Audit.	107.10. The chief auditor may conduct an audit of the accounts or documents of any person having received financial assistance from the municipality or from a legal person referred to in paragraph 2 of section 107.7, as regards the use made of such assistance.
Accounts and documents.	The municipality and the person 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.
Information.	The chief auditor is authorized to require from any officer or employee of the municipality or from any person 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.
Audit.	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.
Duties.	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.
Report.	107.13. Not later than 31 August each year, the chief auditor shall transmit to the council a report presenting the results of the audit for the fiscal year ending on the previous 31 December and indicate any fact or irregularity the chief auditor considers expedient to mention, in particular in relation to 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.

Report.	The chief auditor may also, at any time, transmit to the council a report of the findings and recommendations that, in the opinion of the chief auditor, warrant being brought to the attention of the council before the filing of the annual report. 2001, c. 25, s. 15.
Report.	107.14. The chief auditor shall report to the council on the audit of the financial statements of the municipality and the statement fixing the aggregate taxation rate.
Report.	In the report, which shall be transmitted to the treasurer not later than 31 March, the chief auditor shall state, in particular, whether <ul style="list-style-type: none"><li>1) the financial statements faithfully represent the municipality's financial position on 31 December and the results of its operations for the fiscal year ending on that date ;</li><li>2) the aggregate taxation rate has been fixed in accordance with the regulations made under section 262 of the Act respecting municipal taxation (chapter F-2.1).</li></ul> 2001, c. 25, s. 15.
Report.	107.15. The chief auditor shall report to the boards of directors of the legal persons referred to in paragraph 2 of section 107.7 on the audit of the financial statements before the expiry of the time within which they are to produce their financial statements.
Report.	In the report, the chief auditor shall state, in particular, whether the financial statements faithfully represent their financial position and the results of their operations at the end of their fiscal year. 2001, c. 25, s. 15.
Testimony.	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.
Immunity.	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.
Immunity.	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.
Immunity.	Except on a question of jurisdiction, no recourse under article 33 of the Code of Civil Procedure (chapter C-25) or extraordinary recourse within the meaning of that Code 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.

Annulment.

A judge of the Court of Appeal, on a motion, may summarily annul any proceeding instituted or decision rendered contrary to the provisions of the first paragraph.  
2001, c. 25, s. 15.

Audit committee.

107.17. The council may establish an audit committee and determine its composition and powers.  
2001, c. 25, s. 15.

## **LIST OF AUDIT REPORTS ISSUED (STATEMENTS OR OTHER FINANCIAL INFORMATION)**

The audit of the financial statements of the Ville de Montréal as at December 31, 2004, allowed us, as well as the external auditors, to issue an unqualified report in this respect.

At press time for the present report, we had also issued unqualified reports on the following financial statements or financial information:

	<b>2004</b>	<b>2003</b>
Fonds des conduits souterrains	X	
Institut de recherche en biologie végétale de Montréal (31 mai 2004)	X	
Société de développement de Montréal	X	
Société d'habitation et de développement de Montréal	X	
La Corporation d'habitations Jeanne-Mance	X	
La Société de transport de Montréal (covérificateur)	X	
Société de gestion Marie-Victorin	X	X
Anjou 80	X	
Cité du commerce électronique	X	X
Caisse commune des commissions des régimes de retraite des employés de la Ville de Montréal	X	
Régime de retraite des cadres de la Ville de Montréal	X	
Régime de retraite des contremaîtres de la Ville de Montréal	X	
Régime de retraite des employés manuels de la Ville de Montréal	X	
Régime de retraite des fonctionnaires de la Ville de Montréal	X	
Régime de retraite des pompiers de la Ville de Montréal	X	
Régime de retraite des professionnels de la Ville de Montréal	X	
Régime de prestations surcomplémentaires de retraite pour les cadres de la Ville de Montréal	X	
Régime de prestations surcomplémentaires de retraite pour les fonctionnaires de la Ville de Montréal	X	
Régime de prestations surcomplémentaires de retraite pour les professionnels de la Ville de Montréal	X	
Régime de prestations surcomplémentaires de retraite pour les contremaîtres de la Ville de Montréal	X	
Régime de prestations surcomplémentaires de retraite pour les employés manuels de la Ville de Montréal	X	
Régime de rentes pour le personnel de la Commission des services électriques de la Ville de Montréal	X	
Régime complémentaire de retraite des employés non syndiqués de l'Office municipal d'habitation de Montréal		X
Régime complémentaire de retraite des employés cols blancs de l'Office municipal d'habitation de Montréal		X
Régime complémentaire de retraite des employés cols bleus de l'Office municipal d'habitation de Montréal		X
Régime de retraite des cadres de la Communauté urbaine de Montréal	X	
Régime de retraite supplémentaire des cadres de la Communauté urbaine de Montréal	X	

	2004	2003
Régime de retraite des employés syndiqués de la Communauté urbaine de Montréal	X	
Régime de retraite supplémentaire des employés syndiqués de la Communauté urbaine de Montréal	X	
Régime complémentaire de retraite des employés de la Ville de Montréal-Est	X	
État des dépenses par catégorie – Programme de la Sécurité du revenu et pour l'organisation des services publics d'emploi		X
État des dépenses pour la rémunération et les avantages sociaux des anciens employés – Programme de la Sécurité du revenu et pour l'organisation des services publics d'emploi		X
État des dépenses par catégorie – Programme de santé communautaire		X
Taux global de taxation de la Ville de Montréal	X	
Office municipal d'habitation de Montréal	X	X
Renseignements complémentaires par ensemble immobilier – Office municipal d'habitation de Montréal		X
Conseil des arts de Montréal		X
Office de consultation publique de Montréal		X
Conseil interculturel		X
Société de gestion NauBerges de Lachine	X	

**EMPLOYEES OF THE GENERAL AUDITOR OFFICE  
YEAR 2004**

<b>General Auditor</b> Michel Doyon, CA, MBA, CIA	<b>Management secretary</b> Hélène Girard
<b>Management agent – general support</b> Jean Roy, CGA (interim)	<b>Programmer</b> Yolaine Levasseur *
<b>Division chiefs</b> Denis Blouin, CA Robert Duquette, CA Bruno Marcil, CA, CISA, CISM	Fernande Désormeaux, CGA * Jean Roy, CGA * Denis Tremblay, CGA *
<b>Audit agents</b>	
Régent Bilodeau, CGA Johanne Boudreau, BAA Jacques Brisson, CA Maryse Brunetta, CGA Li-Chu Chen, BAA Marie Cormier, CA Julien Faucher André Gagnon, CMA Lucie Gauthier, BAA Bernard Goyette, CGA, CMA Gilles Grimard, CGA Jocelyne Laperrière, CGA, CA Marcel Laplante Nicole Larivière, BAA André Leclerc, CA	Ha Le Phan, CGA Ngoc Le Quang, MMS Chantal L'Heureux, CGA Joanne Major, CA Victor Marchand, CGA, CISA Claude Mongelard, CA, CIA Philippe Pitre, BAA Clément Poirier, CGA Michel Proulx, CGA Ronel Rocher, CGA * André St-Pierre, CGA André Sergerie, CA Isabelle Tremblay, CA Roch Tremblay

\* Temporary appointment

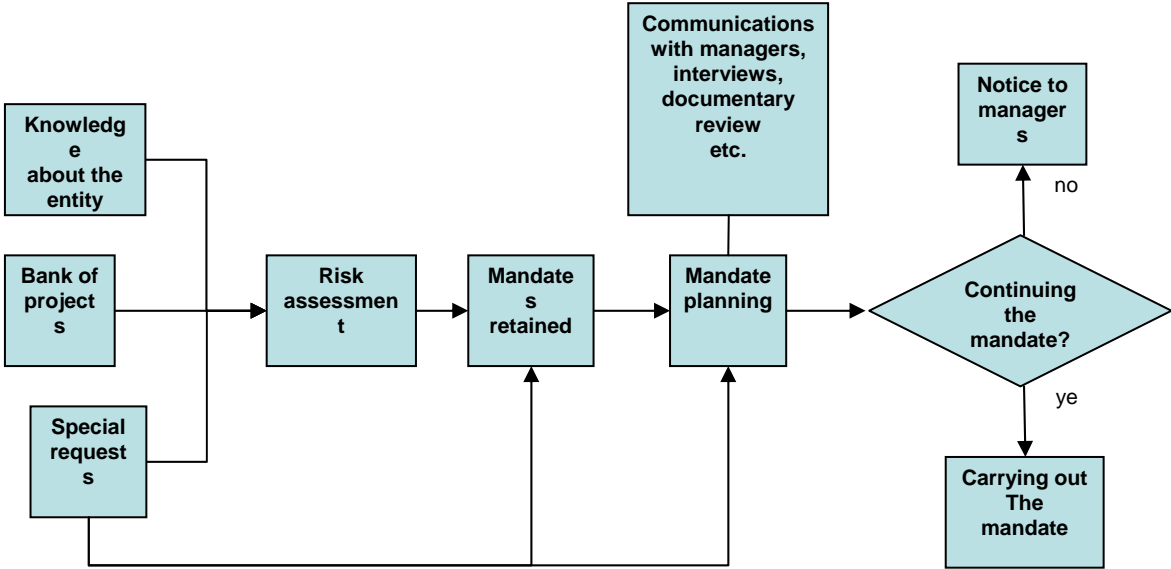


***VALUE FOR MONEY AUDITS  
FLOW CHART***

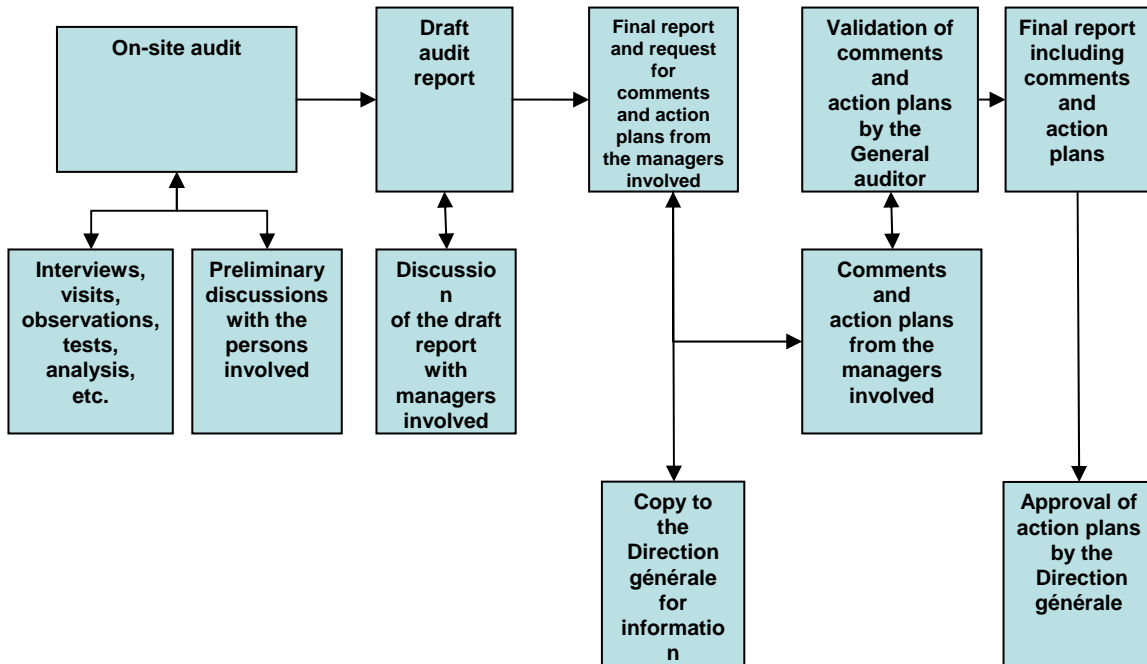
# Planning

## Annual

## Mandates



# Auditing and Report



# Annual report and follow-ups

