

Annual Report of the Auditor General of the Ville de Montréal

For the Year Ended December 31, 2012

May 28, 2013

Agenda

1. Comments and Recommendations from the Auditor General (at the end of the presentation)
2. Overview of the Bureau du vérificateur général
3. Investigative and Forensic Accounting report
4. Financial Statement Audits
5. Value-for-Money and Information Technology Audit
- 5.1. Follow-Ups to Recommendations from Previous Years

Audits

- 5.2. Asset Disposal
- 5.8. Residential Swimming Pool Safety Regulations
- 5.13. Protection of Personal Information
- 5.14. Penetration Tests
- 5.12. “Time Management” Subproject
- 5.4. Issue of Building and Subdivision Permits – Contaminated Lands
- 5.3. Infrastructure Work Timeframes
- 5.9. First Responder Service and Fire Safety Cover Plan
- 5.10. Subcontracted Construction Work
- 5.11. “Integrated Human Resources and Payroll Management System” Project
- 5.7. Contract Awarding and Management Process (Société du parc Jean-Drapeau)
- 5.5. Implementation Plan for Secondary Water and Sewer System Infrastructure Work
- 5.6. Implementation Plan for Arterial Road System Infrastructure Work

2. Overview of the Bureau du vérificateur général

3. Investigative and Forensic Accounting Report

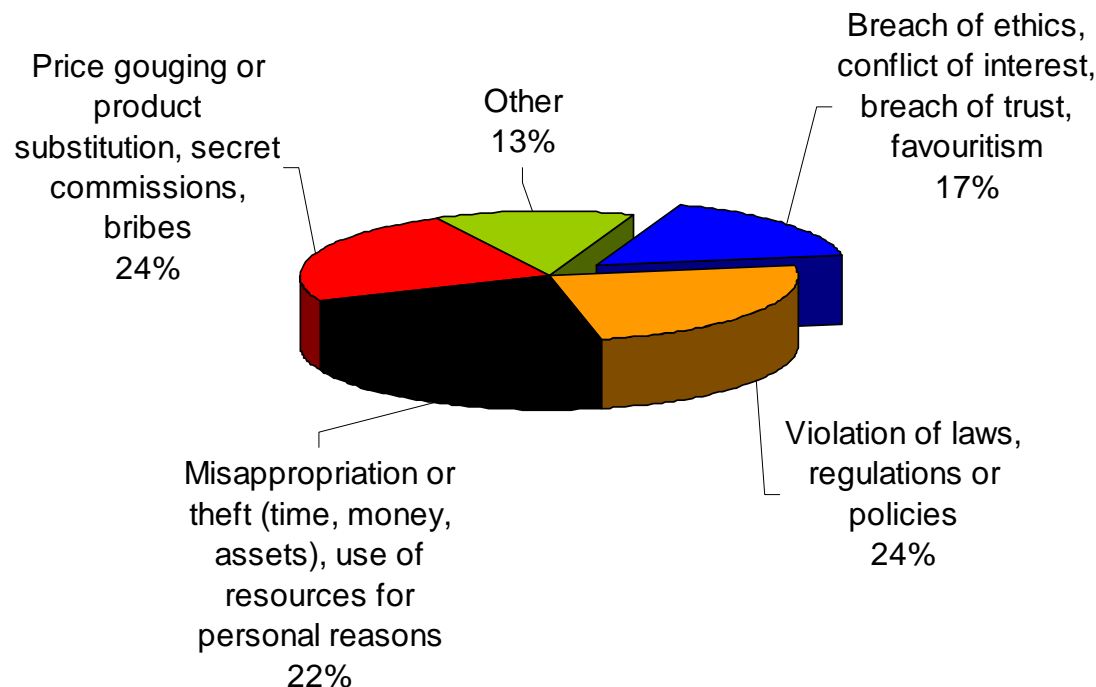
Background

- The BVG has an investigative and forensic accounting team in place to deal with allegations of wrongdoing
- Since the management of the ethics hotline was transferred to the SCG, these allegations can be communicated to the BVG by email, by mail, by telephone and in person
- The BVG has a highly secure email account set up specifically for this purpose, hosted by an external provider not linked to the city's email system
- Allegations can be emailed to verificateurgeneral@bvgmtl.ca

Processing Allegations

- 41 allegations received in 2012, compared to 36 in 2011.
14 allegations currently being analyzed

Overview of Allegations Received By Type



4. Financial Statement Audits

5. Value-for-Money and Information Technology Audit

5.1. Follow-Ups to Recommendations from Previous Years

Results of the Follow-Ups to Recommendations

- For recommendations made in 2011, **92%** have been “completed” or are “under way” compared with the municipal administration’s annual objective of 80%
- However, there is a significant reduction, **therefore a certain slowdown**, of the percentage of recommendations “completed” in the year following the year they were made:
 - 35% of recommendations made in 2011
 - 69% of recommendations made in 2010

5.2. Asset Disposal

Introduction and Audit Scope

■ Introduction

- Disposal of assets once their useful life is over
- There are several possible solutions: repurpose the asset, sell the asset for a fee, give the asset away for free, recycle or discard the asset

■ Audit Scope

- Ensure that the city receives fair value for assets it disposes of
- Ensure that assets disposed of can really no longer be used in a cost-effective manner by the city and that disposals are carried out in accordance with applicable laws and by-laws
- Ensure that data on hard drives are securely destroyed before computer equipment is disposed of or reused
- Computer equipment and rolling stock

Key Findings

Computer Equipment

- Lack of a destruction certificate for each hard drive and therefore no assurance that all hard drives were destroyed
- For the SPVM, hard drives are not associated with a computer. As a result, a lost or stolen hard drive may go unnoticed and confidential data could be accessed by unauthorized individuals
- Some boroughs do not use software designed specifically to destroy data securely. Others outsource these services. Confidential data could be lost
- One borough donates its computers to a non-profit organization without ensuring the destruction of hard drive data

Key Findings

Vehicles and Rolling Stock

- The city uses the services of 3 auctioneers
- There is no administrative framework in place for vehicle disposal
- For one borough visited, access to the vehicle storage area is not secure enough to prevent theft of equipment or components

Key Recommendations

Computer Equipment

- Formally document that the data on hard drives have been properly destroyed and consider the relevance of centralizing the destruction of data at the STI
- For the SPVM, implement controls to ensure the secure handling of hard drives that are to be erased

Vehicles and Rolling Stock

- Adopt an administrative framework outlining the steps for vehicle disposal
- Secure the areas where vehicles and other equipment are being stored in the Ville-Marie borough

5.8. Residential Swimming Pool Safety Regulations

Introduction and Audit Scope

■ Introduction

- The main cause of deaths by drowning is the lack of appropriate safety equipment around pools
- Since July 22, 2010, the *Residential Swimming Pool Safety Act* requires citizens to obtain a municipal permit to build, install or replace a swimming pool and the city is responsible for ensuring compliance with this provincial regulation

■ Audit Scope

- Review the measures undertaken by the city business units responsible for ensuring compliance with the regulatory provisions governing swimming pool safety
- Examine the measures adopted to raise pool owners' awareness about the prescribed safety standards

Key Findings

Compliance of the Permit-Issuing Process

- The regulations enforced by certain boroughs are either incomplete or are not harmonized
- The regulatory compliance analysis sheet used to examine permit requests is either absent or incomplete
- The tool designed to track required inspections once a permit has been issued is not used

Identification of Non-Compliant Installations

- Inspection activities aimed at ensuring the safety of residential pools are not incorporated into preventive inspection plans
- The timeframe in which an inspection is performed once a permit has been issued is much too long in certain cases (e.g., 135 days, even 189 days and 293 days **with still no inspection having been performed as of the date of our audit**)

Key Findings

Follow-Up on Notices of Non-Compliance

- Verbal notices are issued that do not include a timeframe for undertaking the necessary corrective action. Also, verbal rather than written notices are issued to offenders who did not cooperate to undertake the corrective action
- When a timeframe is given, it is not always possible to find evidence of follow-up at the end of the timeframe
- Relatively long timeframes were given in urgent situations representing a high drowning risk
- The response time once a notice has been issued is often too long

Mechanisms for Raising Public Awareness

- Few mechanisms exist to raise public awareness and, where they do exist, they are incomplete or outdated

Accountability Mechanisms

- No management report exists for activities related to the issuance of this type of permit

Key Recommendations

- Adopt a regulatory analysis sheet (checklist)
- Determine the tool to be used to correctly and promptly plan inspections following pool installations
- Implement a preventive inspection plan as well as mechanisms to identify non-compliant pools
- Follow up deadlines of notices of non-compliance more closely and give timeframes of <30 days
- Improve public awareness information provided to citizens

5.13. Protection of Personal Information

Introduction and Audit Scope

■ Introduction

- With more than 1.6 million residents and 28,000 employees, the city collects and processes a considerable amount of information concerning the private life of its citizens, elected officials and employees
- In Québec, the *Act respecting access to documents held by public bodies and the protection of personal information* applies to the city
- Personal information (PI) identifies a natural person and is factual or subjective
- The theft of PI can lead to identity theft or harm an individual's reputation

■ Audit Scope

- Evaluate the effectiveness of the controls put in place to ensure adequate software and physical security of the PI held by the city, with the exception of information related to the SPVM

Key Findings

PI in Environments Other than Production Environments

- Only production environments should contain PI and not development, testing and training environments

Security Parameters of Non-Configured Passwords for Two Systems Containing Sensitive PI

- Employeur D, which contains **medical data** on employees, elected officials, judges and commissioners
- Ludik, which contains citizens' social insurance numbers and health insurance numbers

Access Management Procedures

- For some systems, no review of access rights is conducted, while for other systems, access rights are reviewed only once a year
- There is no access management procedure for SDSR (the renovation subsidy application system) and the procedure is incomplete for Employeur D

Key Recommendations

- Black out PI in environments other than the production environment
- Configure the security parameters of passwords for targeted systems
- Improve access management procedures

5.14. Penetration Tests

Introduction and Audits Scope

■ Introduction

- Several business units of Ville de Montréal and some bodies controlled by the city have systems through which sensitive and confidential information passes
- Most of these systems are housed on networks that can sometimes be accessed through the Internet. Best practices suggest that organizations should conduct penetration tests to measure the security of these networks

■ Audits Scope

- Test the security of computer environments that have been deemed critical through a penetration testing program that was initiated in 2012 and is ongoing

■ Results of Penetration Tests

- Naturally, the results are to be kept confidential

5.12. “Time Management” Subproject

Introduction and Audit Scope

■ Introduction

- The city purchased the Kronos software package after analyses had shown that the Oracle Suite chosen for the HR-Payroll MS project did not meet the city's needs
- The goal of the “time management” (TM) subproject is to provide the city with a single TM system for the boroughs and central departments

■ Audit Scope

- Assess the management of the project and its effects on the implementation of the TM system
- Take stock of project risks with respect to security issues, performance and continuity

Key Findings

Project Management

- Deficient project structure
- Absence of organizational and technical risk mitigation measures

Development Phases

- Summary evaluation of the gaps between the city's TM processes and the functions of the Kronos software package
- The decision to purchase a block of licences from the onset of the project resulted in high costs for unused licences
 - A study on the impacts of the 2006 moratorium assessed the costs of supporting these licences in 2007 at \$2 million
- Risk that the data parameterized in the Kronos package do not comply with the collective agreements and related frameworks

Key Findings

Security, Performance and Continuity Management

- No segregation of incompatible duties between development and production environments, too many “SuperAccess” administrator codes and no security certification for the Kronos software package
- Absence of parameters to measure the performance of the Kronos software package
- No succession plan

Key Recommendations

- Integrate the project's current risks into a dashboard and report on these to the IT project and sectoral steering committees
- Consider using a progressive licence acquisition strategy in the future
- Validate that the collective agreements and letters of agreement were properly interpreted and integrated into the Kronos software package
- Review the assignment of access profiles, improve control procedures and obtain security certification
- Establish standards to measure the performance of the Kronos software package and implement a succession plan

5.4. Issue of Building and Subdivision Permits – Contaminated Lands

Introduction and Audit Scope

■ Introduction

- In accordance with the *Environment Quality Act* (EQA):
 - The city is required to maintain a list of contaminated lands
 - The city cannot issue building or subdivision permits that concern land that is entered on its list of contaminated lands and is the subject of a rehabilitation plan approved by the ministry without obtaining the prior attestation of an expert confirming that the land in question is compatible with its planned new use
- Consequence of non-compliance: potential lawsuits

■ Audit Scope

- Ensure that the boroughs comply with the applicable legislative provisions when issuing building permits
- Ensure that applicants pay the established fees for obtaining their permits and that duties are properly segregated

Key Findings

Audit of Permit Applications and Compliance with the Applicable Legislative Provisions

- Files do not always provide evidence that verifications were carried out by the boroughs
- Employees are not familiar with the applicable legislative provisions (lack of training)
- Three boroughs out of four do not use a control tool (checklist) to ensure that permit applications are properly processed

Establishment and Collection of Fees

- Information used to calculate the amount invoiced not always contained in the file: **errors were detected**
- Little evidence of file reviews
- Permits issued before the applicable fees are paid

Key Recommendations

Audit of Permit Applications and Compliance with the Applicable Legislative Provisions

- Remind employees of the legislative provisions as well as the existence of the applicable guidelines adopted by the city
- Use an analysis form based on a checklist of the main points that must be verified before issuing a permit and of the documents that must be provided

Establishment and Collection of Fees

- Implement procedures to document the calculations made to determine applicable permit fees
- Implement measures for reviewing files before permits are issued

5.3. Infrastructure Work Timeframes

Introduction and Audit Scope

■ Introduction

- The administrative provisions contained in the call for tenders documents stipulate the applicable timeframes, penalties for lateness and change authorizations
- The successful bidder agrees to comply with the clauses of the contract signed with the city

■ Audit Scope

- Ensure that contracts signed with contractors stipulate the applicable timeframes
- Ensure that mechanisms are in place to track compliance with timelines
- Ensure that measures are taken when work is not completed on time (e.g., penalties)
- 17 projects audited in 7 units

Key Findings

Projects Completed Within the Initial Timeframe

- Out of 17 projects, 8 were completed within the planned timeframes
- 8 projects were not completed within the timeframes and 1 project is currently postponed
- 1 case out of 8: a penalty was imposed
- 6 cases out of 8: the worksite project manager provided no documents explaining why the project was late and no penalty was imposed
- In 1 case, the contractor issued a timeline with work periods that differed from the timeline requested by the city without the city's prior authorization
- Work was interrupted and resumed without the city's authorization

Key Recommendations

Unit managers must:

- Formally and periodically obtain a list of projects that did not comply with originally planned timeframes and validate the reasons cited by the project manager
- Periodically report to their immediate supervisors to inform them of projects for which no penalties were imposed when they should have been

5.9. First Responder Service and Fire Safety Cover Plan

Introduction and Audit Scope

■ Introduction

- Two major projects
 - Implementation of a first responder (FR) service
 - 10-year agreement with the ASSSM and the Corporation d'urgences-santé
 - Response time: 4 min, 50 s, vs. the target time of 7 min, 59 s
 - Improve the chain of pre-hospital emergency services
 - Implementation of a fire safety cover plan in compliance with the law
 - It is a risk analysis exercise

■ Audit Scope

- Ensure that the implementation of the FR service achieved the expected results
- Ensure that the FSCP is moving forward in accordance with the implementation plan adopted by the UAC

Key Findings

First Responder Service

- Obligations stemming from the MOU
 - Provide emergency care (clinical protocols)
 - Compliance with obligations except for radio communications
 - Harmonization of radio codes not formalized according to the MOU
- FR service implementation and operating costs
 - Deficit of \$2.3 million in implementation costs (2007-2009)
 - Deficit of \$12 million in start-up costs (2007-2009)
 - Operating costs (2010-2011) rose significantly and the deficit now sits at \$21 million. Forecast for 2012: a deficit of \$6 million
 - Due to the 2010 arbitration settlement on FR bonuses
 - Due to the higher than expected volume of emergency calls (ASSSM's contribution based on 50,000 calls per year vs. 72,400 calls in 2011: impacts on labour costs, vehicle maintenance, etc.)

Key Findings

Fire Safety Cover Plan

Three components must be implemented

- First component: Prevention (includes six programs aimed at reducing fires the their repercussions)

1	Assess and analyze incidents using an integrated prevention activities management system	Considerable delays in development and implementation: 2014 instead of 2013 Costs not initially assessed Scheduled date non-compliant with the plan approved by the MSP
3	Smoke detector inspection and distribution program	Incomplete measurement of the percentage of operational smoke detectors (2011 only)
4	Inspections of the highest risk areas (class 3 [high risk] and class 4 [very high risk])	8,817 inspections still need to be carried out in 2013, but nothing has been formally planned

Key Findings

- Second component: Response – strike force
 - Construction or refurbishment of fire stations:
 - Construction of fire station 59 postponed to 2013 vs. 2010
 - Delayed refurbishment of fire stations 51 and 67 (1 to 3 years)
 - Delayed implementation of a training centre
 - Delivery of a heavy vehicle delayed by one year
 - The planned costs for the component have exploded:
 - \$38 million instead of \$30 million as initially planned
 - Causes:
 - Use of data that were not up to date (2002-2005) for the construction of similar fire stations
 - Constraints specific to the fire stations not taken into consideration (old fire stations that are more complex to refurbish), particular urban planning by-law requirements of the boroughs, etc.
 - This raises questions about the overall reliability of the cost estimates for the implementation of the Fire Safety Cover Plan
 - These projects had been approved by the MSP

Key Findings

- Third component: Water supply
 - Initially, the Fire Safety Cover Plan included the construction of reservoirs to solve a water supply problem in the West Island when firefighters were fighting a fire
 - These projects were included without feasibility studies or cost estimates
 - However, following summary analyses, these projects presented technical constraints that required major investments, for example, the city's acquisition of land and the obtaining of public easements for the locations. The projects were postponed without cost justifications
 - The SIM redirected its efforts towards a less costly solution, the implementation of 11 reserved fire hydrants. A total of 10 were installed
 - This is an important modification to the FSCP that the MSP must approve once it has been demonstrated that it meets fire safety needs

Key Recommendations

First Responder Service

- Ensure compliance with the memorandum of understanding with respect to radio communications, i.e., the adoption of a formal radio communication agreement
- Review current funding parameters and cost

Fire Safety Cover Plan

- Review parameters to ensure delivery of projects by December 31, 2013
- Review inspection parameters for high risk fire hazards
- Submit all modifications made to the initial fire safety cover plan to the MSP for approval

5.10. Subcontracted Construction Work

Introduction and Audit Scope

■ Introduction

- The monetary value of the work contracts awarded by authorities amounted to approximately \$500 million (2010-2011)
- It may happen that a contractor entrusts part of the work to subcontractors
- The city is legally bound to the contractor to whom it has awarded the contract. Subcontractors are legally bound to the contractor
- Since 2010, the provincial government has brought several amendments to the laws in an effort to prevent, combat and penalize certain fraudulent practices
- This legal setting reinforces the fact that the city must know the identity of subcontractors

■ Audit Scope

- Evaluate the extent to which the city:
 - Assures itself that the work entrusted by the contractor to subcontractors complies with the call for tenders documents and books of specifications
 - Implements the necessary audit procedures to obtain relevant information for decision making

Key Findings

Clauses Contained in the Books of Specifications and in the Call for Tenders Documents

- Lack of uniformity between the administrative clauses applied by different business units to subcontractors

Monitoring the Application of the Clauses Related to the Information on Subcontractors and Verifications Carried Out

- Contractors do not always fully apply the clauses pertaining to subcontractors with respect to the information that must be provided and the time at which it must be provided
 - Description of the work to be done
 - Copy of the licence issued by the RBQ
 - Amount and date of each subcontract of a value >\$25,000
 - Number and date of issue of the certificate of compliance from Revenu Québec

Key Findings

Monitoring the Application of the Clauses Related to the Information on Subcontractors and Verifications Carried Out (continued)

- No follow-up mechanism is in place to obtain all the required information and documentation concerning subcontractors “before the work begins”
- No control mechanism is in place to ensure that subcontractors comply with the legal provisions that apply to them
- No action is taken to deal with contractors who fail to comply with requirements in the books of specifications that apply to subcontractors

Key Recommendations

- Provide for standardization of clauses in books of specifications dealing with the receipt of a list of subcontractors and of information required
- Put control mechanisms in place so that required information about subcontractors can be obtained from contractors
- Ensure that subcontractors comply with the legal provisions that apply to them
- Properly document the follow-up action taken

5.11. “Integrated Human Resources and Payroll Management System” Project

Introduction and Audit Scope

■ Introduction

- In 2003, the EC approved a project to implement an integrated platform that covers the financial, procurement, human resources and payroll management systems
- A total budget of \$53 million was allocated to the project, including \$25 million to the HR-Payroll MS project
- In 2006, a moratorium on the HR-Payroll MS project was announced. In 2007, work resumed on the “time management” subproject only whereas the other processes inherent in this project remained pending

■ Audit Scope

- Take stock of the moratorium announced in 2006, the measures under way to restart the project and the contemplated scenarios
- Assess the current situation with respect to project governance and the capacity to efficiently manage HR and payroll management processes

Key Findings

- Neither the Direction générale nor authorities have taken an official position on the continuation of the project since 2006
- Substantial resources have already been invested in the project and only a few modules were completed
- Very significant risks, including:
 - Disorderly development that no longer meets needs
 - Higher operating and maintenance costs
 - Jeopardization of the initial objective set for the completion of the Integrated HR-Payroll MS project as well as its benefits

Key Findings

- The total cost of the project, if completed, will greatly exceed the original budget of \$25 million
- \$11.6 million was paid to CGI, which was to act as an “integrator,” but this amount was essentially spent for purposes other than those authorized by the EC
- The causes of the overspending:
 - Oracle Suite products were customized in order to be aligned with the city’s existing practices
 - Deficient project management
 - Lack of leadership, follow-up and accountability reporting

Key Recommendations

The Direction générale must:

- Revive the entire Integrated HR-Payroll MS project in a manner that is keeping with the original implementation strategy and the lessons learned from the past
- Update the cost estimates to complete the project
- Make a recommendation to the EC, proposing an action plan and an update of the costs to complete the project
- Ensure a rigorous management framework for the project and accountability reporting to the EC

5.7. Contract Awarding and Management Process (Société du parc Jean-Drapeau)

Introduction and Audit Scope

■ Introduction

- The Société du parc Jean-Drapeau (SPJD) is a paramunicipal corporation
- The SPJD may grant contracts for the construction, renovation, and maintenance of any building, equipment or facility under its jurisdiction
- However, the SPJD is subject to the rules set out in section 573 of the *Cities and Towns Act* (CTA) regarding the awarding of contracts

■ Audit Scope

- Ensure that the awarding and management of contracts at the SPJD are done through a rigorous process that complies with the laws, regulations and internal policies in force
- Ensure that projects are properly planned, that tender documents are compliant, that sharing of responsibilities is adequate and that accountability mechanisms are in place
- 10 contracts valued at more than \$100,000, including 5 that are related to the Hélène-de-Champlain building renovation project

Key Findings

Project Planning: Hélène-de-Champlain

- One developer was selected through a call for qualifications to sign a 35-year lease
- No FTP (functional and technical program) document aimed at defining the scale, estimated cost, time limits for completion and scope of needs for the project was produced, which caused the project to go awry
- The developer was entrusted completely with the project design, the SPJD had no direct control over the project and no instructions were given regarding delivery of the final drawings and specifications, which constitutes an inappropriate distribution of roles and responsibilities. It was the developer, not the SPJD, that hired the architect directly, which is a way of bypassing the CTA (section 573). This was not mentioned in the decision-making summary that was submitted to municipal authorities

Key Findings

Project Planning: Hélène-de-Champlain (continued)

- Projected costs of \$7.3 million, mushrooming to \$16.4 million, were calculated on the basis of incorrect information and did not take into account obvious decontamination costs
- Contracts to undertake construction work (e.g., building expansion) were awarded before the project was approved by authorities and the required permits were obtained
- Annual revenues of \$15 million were forecast without any actual market study

Key Findings

All Projects

- Approval of Tender Documents
 - There is no formal approval of tender documents by managers when the call for tenders is prepared either internally or by an outside firm
- Additional Budget Allocations Granted
 - Additional funds were granted for 4 out of the 10 contracts reviewed. Three of these contracts are associated with the Hélène-de-Champlain project, and additional funds granted vary from **94% to 130%** above the original cost of the contract, which we think is very high, considering what the CTA allows in terms of “accessory amendments” to contracts. No formal legal opinion was solicited to confirm the legitimacy of these additional funds

Key Findings

All Projects (continued)

■ Delegation of Powers

- The delegation of powers was not approved by a decision of the EC
- It is unusual that the audit committee is an approval authority
- The president of the board approved 12 \$3.7 million contracts 8 weeks before the council meeting

■ Estimates

- For some projects, there are very high or unexplained positive and negative variances between figures in detailed cost estimates and the cost of the lowest bid. However, the total estimate submitted to the board for approval is not much different from the lowest bid
- In some cases there is no documentation for estimates, and different amounts are put forward

Key Recommendations

- Re-evaluate processes so that all the supervision and monitoring that projects will require are ensured during the planning stage
- Estimate, monitor and document project costs adequately
- Select the potential developer for the Hélène-de-Champlain project by conducting a rigorous risk analysis
- Communicate relevant information to authorities
- Rigorously document the reasons for allocating additional funds to the original contract, including the recording of written legal opinions
- Have the delegation of powers approved by the EC, withdraw approval rights from the audit committee, hold special board meetings for urgent approval of expenditures related to the delegation of powers
- Document estimate variances with the lowest bid that exceed a threshold deemed acceptable (e.g., $\pm 10\%$)

5.5. Implementation Plan for Secondary Water and Sewer System Infrastructure Work

Introduction and Audit Scope

■ Introduction

- The waterworks system consists of 681 km of primary lines and 3,572 km of secondary lines
- The sewer system consists of 4,234 km of secondary lines and 689 km of primary lines (sewer mains and interceptors)
- Even in 2002, studies already showed that these systems were in an advanced state of deterioration and had serious investment and maintenance deficits
- Considerable expenditures must be made every year based on priorities established and approved by authorities
- Response plans (RPs) were produced

■ Audit Scope

- Ensure that responses deployed on the city's infrastructures are based on the establishment of priorities. We focused our efforts on the secondary systems
- Analyze the processes and tools used to ensure that investment and maintenance spending priorities are well identified (2010 and 2011)

Key Findings

Inventory Data

- The inventory data are incomplete and may be different from actual data (materials, diameters, year of construction)
 - The reason for this is that many as-built (AB) plans are missing
- Even though a guideline was issued, most AB plans are not completed and transmitted after work is performed to ensure that data are updated

Evaluation of the Condition of Systems

- The evaluation of the condition of secondary sewer lines is incomplete. The city does not have a complete overview of the condition of sewer lines. It has no way of assessing improvement or deterioration in the systems
- The inspection of water mains to detect leaks is not complete and the degree of progress in this area varies with each borough, with the result that repair work is delayed, which worsens their condition. We find it deplorable that the city does not have an accurate profile of the condition of secondary water systems, which would definitely improve its activity planning process

Key Findings

Comprehensive Response Strategy

- The response strategy is incomplete because the present condition of the system is unknown, especially with respect to lines in critical condition. Projects could be prioritized in the RP in a completely different way
- There is no preventive maintenance program for lines that are not in critical condition, which exacerbates the deterioration of the system
- Maintenance, repair, rehabilitation and replacement activities are not part of a comprehensive response strategy

Level of Service

- Following several studies, it was determined that the annual investment level required over a 10-year period to ensure the continuity of the secondary system climbed from \$127 million to \$246 million. **With the figure of \$246 million used as a baseline, the total investment deficit (2004-2011) then becomes \$1.5 billion**
- **The RP proposes \$290 million in investments over a 5-year period**

Key Findings

In millions of dollars

Target and actual investments – DGSRE

	2004	2005	2006	2007	2008	2009	2010	2011	Total	Average
Total invested	41	53	54	44	68	133	55	71	519	65
Target according to the 2003 studies ^a	127	127	127	127	127	127	127	127	1,016	127
Deficit	86	74	73	83	59	-6	72	56	497	62
Percentage of the target reached	32%	42%	43%	35%	54%	105%	43%	56%	51%	51%
Revised target 2010 ^b	246	246	246	246	246	246	246	246	1,968	246
Corrected deficit	205	193	192	202	178	113	191	175	1,449	181
Percentage of the revised target reached	17%	22%	22%	18%	28%	54%	22%	29%	26%	26%

Annual investments

Target according to the 2003 studies	According to good practices (1%)	According to the 2010 target	Target according to the final RP	Actual averages (2004 to 2011)
127	185	246	290	65

Key Findings

Level of Service (continued)

- The concept of “level of service” has never been clearly defined. Only broad generalities about “preserving infrastructures” have been offered
- What is meant by this phrase? Does it mean maintaining them in their present condition? Having a certain percentage of lines “in good condition”? Since the city has no precise objectives for its levels of service, it cannot measure the impacts of investments and spending
- At present, there is a world of difference between amounts invested and the city’s intentions of maintaining assets “in good condition” because this phrase is too vague, providing no measurable objectives

Key Findings

Investments Planned for 2010-2011

- The investment budgets for 2010-2011 were well below the projected target of \$290 million
- Worse still, actual spending averaged \$63 million for 2010 and 2011, not even as much as the amounts budgeted. Many projects must be postponed, further deepening the investment deficit

System Maintenance 2006-2014

- The level of spending for maintenance of secondary systems was lower than the target set, driving up the accumulated maintenance deficit

Key Findings

Investments (in millions of dollars)

Year	Partnership agreements		TCEP						
	Projects		Amended budget ^a		Budget allocated to projects		Actual expenditures		
	No.	Amount	Amount	% agreements	Amount	% agreements	Amount	% agreements	% amended budget
2010	234	129	102	79	64	50	55	43	54
2011	238	138	109	79	74	54	71	51	65

Key Findings

Maintenance Spending

Year	Expenses assumed by		Total	Objective	% of the spending objective
	the DGSRE	the boroughs			
Actual spending					
2006	3.7	32.7	36.4	68.3	53
2007	5.9	33.0	38.9	68.3	57
2008	7.7	31.2	38.9	68.3	57
2009	8.7	32.8	41.5	68.3	61
2010	8.9	32.8	41.7	68.3	61
2011	11.2	34.8	46.0	68.3	67
Total	46.1	197.3	243.4	409.8	59
Projections					
2012	15.9	36.1	52.0	68.3	76
2013	17.6	36.1	53.7	68.3	79
2014	19.6	36.1	55.7	68.3	82

Key Findings

- The city's investment budgets are not nearly enough to preserve secondary system assets
- This investment deficit for secondary systems alone rose from \$0.9 billion in 2003 to \$2.3 billion in 2012. For the waterworks system as a whole, the deficit rose from \$1.5 billion in 2003 to \$3.8 billion in 2012
- The city should find funding methods to eliminate this investment deficit, or, at the very least, invest according to the priorities established
- The city has almost reached the point of no return. This could prove catastrophic in coming years in terms of both funding that will be required to repair infrastructures and quality of life for Montrealers (breaks, water damage, hindrances to traffic)

Key Recommendations

- Complete the inventory data
- Complete the evaluation of the condition of the sewer line system and complete the identification of leaks in water mains
- Develop a comprehensive response strategy integrating maintenance, repair and major rehabilitation work
- Implement a structured preventive maintenance program
- Define clear, measurable objectives in the form of levels of service, determine the long-term investment needed to reach these levels of service and ensure that approval is obtained from authorities. Assess the results every year
- Evaluate the accumulated maintenance deficit periodically
- Document project postponements and projects selected for implementation that do not appear in the RP

5.6. Implementation Plan for Arterial Road System Infrastructure Work

Introduction and Audit Scope

■ Introduction

- The arterial system consists of 845 km of roads, 842 km of sidewalks and 241 km of curbs, and is valued at \$3.4 billion, or 31% of the entire road and sidewalk system
- The system is heavily used by automobile traffic, and much of it has already reached the end of its useful life, even exceeding its useful life in some cases. Many roads and sidewalks are already in poor condition and are the subject of numerous complaints
- In September 2010 the Direction des transports estimated that annual investments of about \$326 million would be required over the next 10 years to keep roads and sidewalks (arterial and local systems) in their 2010 condition. The share for the arterial system is \$101.1 million

■ Audit Scope

- Ensure that responses deployed on the city's infrastructures result from established priorities
- Review the planning process implemented by the Division de la gestion des actifs de voirie (DGAV) of the Direction des infrastructures (2010 and 2011)

Key Findings

Inventory Data

- Some data are not available (e.g., historical data, as-built plans)

Comprehensive Response Strategy

- Maintenance, repair and rebuilding activities are not part of a comprehensive response strategy
- There is no structured preventive maintenance program
- The provisions of the *By-law concerning the delegation to borough councils of certain powers relating to the arterial road system* that deal with accountability reporting are not being complied with

Level of Service

- The level of service (desired condition of the system) and the corresponding level of long-term investment were never confirmed clearly and specifically by municipal authorities

Key Findings

Determination of Priorities

- The DGAV was unable to demonstrate that projects retained in its annual planning (2010 and 2011) were those with the highest priority
- Not all projects appearing in the project log are analyzed to determine their level of priority over a timeline of several years

Allocation and Use of Resources

- Budgets allocated are not sufficient to cover the investments required according to scenarios proposed in 2010
- A large portion of the budget is not allocated to project implementation during the year
- Many large-scale road and sidewalk projects were postponed to subsequent years

Accountability Reporting

- No mechanism is in place for reporting to the Direction générale and authorities (degree of implementation of projects planned, project postponements, changes in the investment deficit, changes in the expected condition of the road infrastructure)

Key Recommendations

- Produce a report on unavailable inventory data
- Develop a comprehensive response strategy that integrates maintenance, repair and rebuilding work
- Implement a structured preventive maintenance program
- Ensure compliance with the provisions of the *By-law concerning the delegation to borough councils of certain powers relating to the arterial road system* that deal with accountability reporting

Key Recommendations

- Obtain approval from CC concerning the targeted level of service and the corresponding long-term investment level
- Document the selection of projects
- Integrate the responses to be implemented in an implementation plan covering a definite time frame
- Document the progress status of planned investment projects and provide reasons for postponements
- Establish accountability mechanisms for the degree of implementation of planned projects, for project postponements, for changes in the investment deficit, for changes in the expected condition of the road infrastructure

1. Comments and Recommendations from the Auditor General

Management of the Ethics Hotline and EPIM

- I remain convinced that it is in the city's interest to entrust the BVG with the responsibility of managing the ethics hotline. Accordingly, I reiterate the request I made to CC last October 17, which was that responsibility for the ethics hotline be transferred to the BVG.
- Moreover, my office has remained in contact with the EPIM to coordinate our respective duties with a view to efficiency and effectiveness

Avenues to Explore for Improving the City's Management Processes

Risk Management

- I recommend that CC ensure that the city produce a new risk management grid to determine key sectors as well as activities that are more exposed to misappropriation of funds in order to increase surveillance and strengthen its internal controls, thereby preventing financial losses

Avenues to Explore for Improving the City's Management Processes

Expected Levels of Service

- I recommend that CC take the necessary steps to ensure that:
 - Levels of service are established for infrastructures and buildings
 - These levels of service are submitted to and approved by authorities
 - Levels of investment that correspond to the approved levels of service are allocated over a long-term period
 - The city adopts a realistic funding method so that responses deemed necessary can be implemented

Avenues to Explore for Improving the City's Management Processes

Infrastructure Project Planning

- I recommend that CC take the necessary steps to ensure that infrastructure project planning is carried out over a period of several years in order to facilitate project implementation and help prioritize longer-term responses

Three-Year Capital Expenditures Program (TCEP)

- I recommend that CC take the necessary steps to ensure that:
 - Adoption of the TCEP is scheduled earlier so that business units can plan their projects in a timely manner
 - Business units have the resources required to implement the projects provided for in the TCEP

Avenues to Explore for Improving the City's Management Processes

Accountability Mechanisms

- I recommend that CC take the necessary steps to ensure that business units are clearly informed of the high-priority or strategic sectors on which they must regularly report so that the municipal administration will obtain the complete information it needs to make informed decisions and fulfill its governance responsibilities

Follow-Up to the Auditor General's Recommendations

- I recommend that CC take the necessary steps to ensure that business units follow up more rigorously on the auditor general's recommendations

Auditor General's Budget

- After examining my 2011 report, the CPFA formulated recommendations to solve the problem of additional audit costs I have had to assume as a result of several bodies being included in the city's reporting entity since January 1, 2011
- My budget for fiscal 2013 was thus increased by \$610,000. I understand that this increase will be recurring
- I am thrilled with the progress made and the CPFA's and CC's responsiveness