

V.13. Outsourcing Project for Telecommunications Services—Follow-Up



Vérificateur général
de la Ville de Montréal

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LIST OF ACRONYMS

CET	Centre d'expertise en télécommunications	SPVM	Service de police de la Ville de Montréal
CSC	Centre de sécurité civile	SSIM	Service de sécurité incendie de Montréal
DSI	Direction des systèmes d'information	STI	Service des technologies de l'information
ICMD	inventory and configuration management database	TCEP	three-year capital expenditures program
JIC	joint issue-solving committee	UPC	uninterruptible power supply
OPP	operational process and procedure		

V.13. OUTSOURCING PROJECT FOR TELECOMMUNICATIONS SERVICES—FOLLOW-UP

1. INTRODUCTION

In January 2008, the urban agglomeration council of the Ville de Montréal (the city) awarded TELUS Québec (TELUS) a 7-year contract for landline telephone services (\$42 million) and one 10-year contract for data transmission services (\$57 million). Bell Mobility was also awarded a 4-year cellular telephone services contract (\$9 million). Each of these contracts also included a 20% contingency reserve totalling \$18 million. Once these contracts were awarded, TELUS was to assume responsibility for landline telephone services as of October 31, 2008 and data transmission services as of November 30, 2008.

These contracts were the culmination of a strategic planning process that began in 2003, when municipal authorities concluded that the existing networks' limited capacity was insufficient to support the city's growing needs, there was an insufficient reliability level for critical applications and there was a high degree of equipment obsolescence. The purpose of the new contracts, which went to calls for tenders in 2007, was to ensure the availability and support the development of the city's high-performance networks at a minimum cost to the city. The adopted strategy was in line with the city's outsourcing philosophy, under which the city retains the responsibilities of "planner-user," while transferring operational responsibilities to the winning bidder.

The decision-making summary on the contract awards stated that the effort to outsource telecommunications services (the project) was among the objectives targeted in the city-wide review of activities, services, operations and programs (RASOP). One of these objectives was to optimize use of the city's telecommunications networks and the decision-making summary specified that these contracts would result in savings of some \$50 million over a 10-year period. These savings were associated for the most part with the deployment of landline telephony and data transmission services, as outlined in the contracts awarded to TELUS, and were largely predicated on the

widespread transfer of landline telephony to IP telephony¹ and a reduction in expected investment.

2009–2010 AUDIT

In October 2009, nearly a year after the transfer of control as specified in the contracts, we began our audit, which at the outset focused primarily on the administration of the outsourcing contracts and the monitoring procedures that had been instituted. As we observed that there had been a significant delay in the project, we shifted our focus to identifying the causes of the delays and the challenges associated with the operational phase, which was to begin in 2011. We excluded the cellular telephone services contract from the scope of our audit.

We completed our audit in February 2010, and our findings were published in our 2009 annual report in May 2010. The report revealed that the delays were largely attributable to deficiencies in the process of defining needs, inconsistencies in the outsourcing strategy, divergent positions in the interpretation of the specifications and a major reorganization of the TELUS and city teams involved in the project. As a result, there were several repercussions related to the transfer of services, contract management, financial commitments and the objectives of the outsourcing strategy. A joint issue-solving committee (JIC) was therefore set up to recommend solutions to the disagreements between the city and TELUS.

We made 19 recommendations in our report, particularly to strengthen project governance, help resolve the differences between the parties, ensure sound reporting on the strategic and financial goals in the decision-making summary and ensure the continuity of critical services under the purview of the city.

¹ Internet Protocol telephony.

PROJECT PROGRESS

A) MIGRATION STATUS

In our 2009 audit, the migration process was considerably behind schedule. The process is now, for all intents and purposes, complete, with a few exceptions. The main units where migrations have yet to be carried out are listed in Table 1.

Table 1—Migration Remaining

Category	Target quantity	Status indicated in 2009 report	Status as of November 28, 2011	Planned completion
Réseau Accès Montréal				
IP telephone lines	400	0%	0%	March 2012
Service de police de la Ville de Montréal (SPVM)				
Centrex telephone lines	2,615	0%	0%	April 2012
Links – Data transmission	99	0%	19%	June 2012
Service de sécurité incendie de Montréal (SSIM)				
Centrex telephone lines	622	0%	6%	February 2012
IP telephone lines	290	0%	58%	June 2012

B) CHANGING NEEDS AND INVENTORIES

Although the migration to TELUS is not completely finalized, we can use the information we have to compare the needs indicated in the initial specifications with those we confirmed at the time of our follow-up (see Table 2).

Table 2—Changing Needs

	Based on specifications	Based on due diligence	Situation as of October 28, 2011 ¹
Centrex telephone lines	1,500	6,284	8,553
IP telephone lines	15,000	12,918	6,299
Centrex telephone lines (further investigation required) ²	0	0	725
TOTAL – Telephone lines	16,500	19,202	15,577
TOTAL – Network outlets	9,555	12,918	14,316

¹ According to the Service des technologies de l'information (STI), the number of telephone lines remained fairly stable in November 2011. The number of network outlets, however, could go as high as 15,000.

² Lines that require further investigation to determine current use.

C) PROBLEM-SOLVING

In our 2009 report, we indicated that several factors had contributed to the delay in implementing the transition plans and that a joint TELUS-city committee had been set up to iron out the problems. During this follow-up, we noted that most of the issues had been resolved, except for a few of a financial nature.

Table 3—Issues

	Based on 2009 report	Situation as of November 2011
Issues raised	16	20
Issues resolved	3	17
Issues unresolved	13	3 ¹

¹ Unresolved issues are being handled by a new joint committee focusing on financial matters.

D) SERVICE QUALITY AND RELIABILITY

In the appendices of its contract specifications, the city had included a list that described and set the levels of service that TELUS was required to provide.

However, more than three years after the telephony and data transmission contracts were awarded, TELUS has yet to deliver the management reports and score cards that would allow the city to evaluate the quality of the services provided compared with the required levels of service.

Moreover, several major interruptions² in IP telephony and voice mail services in 2010 and 2011 have cast doubt on the stability of these solutions.

2. AUDIT SCOPE

In our 2009 report, we indicated that, given the strategic importance of this project in providing services to the public and the magnitude of the corresponding financial impacts, we intended to monitor the measures taken in response to our recommendations very closely.

Consequently, at the close of 2010, we sought to determine how rigorously these recommendations had been followed and whether they had helped address the problems that had been identified. We therefore focused our efforts on nine recommendations we considered to be “major,” given their significant impact on strategic objectives, the authorized financial framework and the continuity of telecommunications operations. The remaining recommendations were examined according to the standard follow-up procedures.

This follow-up should answer these questions:

- Did the units involved make satisfactory progress in implementing these recommendations?
- Are there still obstacles hindering progress in telecommunication migration and governance?
- Have any new major problems emerged since our initial audit?

² Translation of the French expression *panne majeure*, which is defined in the document *Processus et procédures opérationnels – Gestion des incidents*.

The nine major recommendations we identified dealt with:

- prioritization of outsourcing objectives
- project governance
- financial framework
- contract management framework
- network continuity and evolution
- disaster recovery plans
- emergency action plan

In addition to these recommendations, we looked into an issue related to management of the security aspect of the project, which will be addressed in section 3.8.

For reasons beyond our control, we were forced to suspend our follow-up activities in spring 2011 and resume them in fall 2011.

To evaluate the measures taken by the units, we obtained their own evaluations of the progress made in actions resulting from our recommendations, in accordance with the standard reporting process for all of our reports. The information we received indicated that three of the nine recommendations were considered to be completed. The other six were expected to be finalized by the time we resumed our follow-up in fall 2011.

To corroborate this information and evaluate the progress made in the issues identified in our report, we obtained relevant information and documents and interviewed key stakeholders at the STI, the Service des finances and the Service des affaires juridiques et de l'évaluation foncière.

The results of our follow-up are based on the situation as it stood on November 30, 2011. Any subsequent changes or improvements have not been taken into consideration in this report.

Our conclusions are based on the same evaluation criteria as the ones we used in our 2009 audit. However, neither the work we did nor the resulting report constitutes a new audit or a comprehensive follow-up.

3. FOLLOW-UP ON MAJOR RECOMMENDATIONS AND NEW FINDING

3.1. PRIORITIZATION OF OUTSOURCING OBJECTIVES

3.1.A. Original Recommendations from the 2009 Auditor General's Report

1. *We recommend that the Direction générale determine which outsourcing objectives shall be prioritized.*
2. *We further recommend that the Direction des systèmes d'information of the Service des immeubles et des systèmes d'information [now the STI]:*
 - *ensure that both parties understand and acknowledge these objectives;*
 - *take the necessary measures to incorporate them in the resolution of issues affecting network migration and contract management.*

3.1.B. Findings

The renewal of the city's telecommunications contracts stemmed from a strategic planning process initiated in 2003. The strategy selected at the end of the process was outsourcing, under which the city aimed to retain its responsibilities as a "planner-user" while transferring operational responsibilities for telecommunications services to the winning bidder.

In 2009, we noted that various factors had contributed to create a certain amount of confusion concerning the outsourcing strategy. This confusion exacerbated the problems and undermined the internal consistency required to implement effective governance. We therefore felt it to be critical to update the objectives, prioritize them and incorporate them into the decision-making process. These recommendations were also shared by the Direction générale, which acknowledged that they were in line with the city's new policies on major projects and programs.

To implement the second recommendation, the STI introduced various mechanisms that made it possible to bring the parties together and ensured a greater degree of internal consistency. Consequently, the decision-making process, the structure of the Centre d'expertise en télécommunications (CET) and the coordination mechanisms between the city and TELUS, and particularly those developed by the JIC, helped build

consensus on the manner in which contracts are interpreted and responsibilities shared. The migration process therefore resumed and progressed at a steady pace. Strides were also made in the development of the governance structure to be implemented at the end of the process.

The STI also held meetings to brief stakeholders on introducing the user-payer principle to its client units. Not only did these meetings help clarify the roles of the parties involved, but they also made it easier to achieve a strategic objective, i.e., optimizing the use of the city's telecommunications services by fostering user accountability and empowerment.

However, the strategic objectives that originally led to the decision to outsource telecommunications services were not reviewed or prioritized by the Direction générale. The Direction générale had planned to submit them in December 2010 but has not yet done so. The strategic plan that was developed before the contracts were awarded has therefore never been formalized and is fast becoming outdated.

3.1.C. Conclusions

After we issued our recommendations, the STI diligently proceeded to clarify its contract management objectives. It approached the matter pragmatically, attempting to overcome roadblocks and minimize financial repercussions for both parties. As a result, several of the issues identified in our 2009 report were resolved, the migration process moved forward at a steady pace and a greater degree of internal consistency was achieved. Although these efforts did not take into account the outsourcing priorities endorsed by the Direction générale, **we consider the implementation of Recommendation #2 to be complete.**

However, since the strategic objectives have not been updated or prioritized, it is impossible to tell whether the resulting consensus and decisions adhere to a strategic, consistent vision of the city's telecommunications services. Some decisions, especially those involving security matters, as we will see later, and the existence of other unresolved issues cast doubt on the city and TELUS's planned approach to sharing responsibilities and risks.

Although the Direction générale did not follow through with Recommendation #1 as it had planned, we feel that this is no longer relevant to resolving the issues and we will therefore exclude it from future follow-ups. However, we reiterate that the STI, in conjunction with the Direction générale, must update the city's telecommunications vision and set specific objectives before drafting the specifications for the next call for tenders.

3.2. PROJECT GOVERNANCE

3.2.A. Original Recommendations from the 2009 Auditor General's Report

3. *We recommend that the Direction générale establish a governance framework that will formalize the frequency and content of reports, especially with respect to financial structure, high priority issues and meeting the objectives sought by outsourcing telecommunications services.*
4. *We also recommend that the Direction des systèmes d'information of the Service des immeubles et des systèmes d'information [now the STI] update the major risks and issues pertaining to the ability to manage the migration effort and the awarded contracts, as well as the mitigation tools that already exist or that will be established in accordance with a precise schedule.*

3.2.B. Findings

In our 2009 report, we assessed the extent to which the project's governance framework enjoyed:

- a clear vision at all levels of the organization
- accountability and leadership that facilitate efficient decision-making
- sufficiently available resources, expertise and managerial information
- a process for oversight and learning that can guide activities toward the targeted objectives

In accordance with the supervisory model developed and distributed by the Canadian Institute of Chartered Accountants (CICA) and consistent with the Direction générale's work on the *Cadre de gouvernance des projets et des programmes de gestion d'actifs*

municipaux, we felt these conditions were essential to achieving project objectives efficiently and effectively.

Beyond the problems linked to the clarity of the vision and objectives that we discussed earlier, we pointed out the need to tighten up the decision-making structure, improve risk assessment and control, prepare action plans to mitigate these risks and report to authorities.

Although the STI conducted a risk assessment exercise within the CET and designed a project monitoring and oversight system based on score cards and a register of issues, these elements had not been incorporated into the formal monitoring and reporting structure when our report was issued in 2009. To achieve this goal, we felt that the STI needed to have the necessary resources and reach an agreement with the Direction générale on a formal, simple and effective means of monitoring and reporting.

In response to Recommendation #3, the Direction générale committed to submitting an decision-making summary to the executive committee to formalize the reporting process. Initially, this summary was to have been produced in December 2010. However, with the executive committee's attention focused on city budget cuts and the emergence of several uncertainties related to the development of the financial framework, the decision-making summary had still not been submitted as of the end of our follow-up.

As for the STI, it has strengthened its internal monitoring and reporting capabilities. A management score card report displaying the status of the migration has been regularly submitted to the department head. The same approach has been taken to track the JIC's activities. This has helped promote effective decision-making in line with target objectives. However, beyond the standard budget process, reporting to the Direction générale and authorities remains limited and has not been incorporated into the new *Cadre de gouvernance des projets et des programmes de gestion d'actifs municipaux*.

In response to Recommendation #4, the STI, in conjunction with TELUS, has conducted various risk analyses at certain stages of the migration process, especially within

departments whose operations are deemed critical, e.g., the SPVM, the SSIM, drinking water treatment plants and the wastewater treatment plant. We did not perform a detailed check of the quality of these analyses, but they appear to us to be relevant and thorough. The STI has not updated or monitored the risks that had been identified by the CET in 2009. The STI considers that the purpose of this exercise was first and foremost to promote a greater understanding of the project within the unit and that other mechanisms would subsequently be introduced to enable it to effectively track the main project risks.

3.2.C. Conclusions

We consider that the implementation of Recommendation #3 has not been completed and we will continue to monitor it. As we will see later in this report, the project's financial framework is still in development. We therefore feel it would be preferable to wait for the migration process to be finalized before getting into the framework specifics. In other words, it is reasonable that the decision-making summary that the Direction générale had originally planned on developing has still not been submitted. However, we do feel that it would have at least been possible to formalize the frequency and content of the accountability process to be submitted to the authorities.

Developing a score card that monitors the main risks of the migration process, contract administration and financial commitments would still be worthwhile, and we reiterate that it should be incorporated into the accountability process. It would make it possible to track budgets more carefully and thus understand the residual risks that the city agrees to assume. Accordingly, the STI has begun considering the qualitative and quantitative aspects that should be included in its reports to its clients and to the Direction générale.

Although the STI has not updated all of the risks and issues it identified in 2009, we consider that the **implementation of Recommendation #4 meets the desired objectives**, i.e., the ability to manage the migration and administer outsourced contracts. **We therefore consider that it has been completed.** However, we feel that the integrated management of the risks associated with the entire outsourcing project,

not just contract administration, should be pursued, especially in response to Recommendation #3.

3.3. THE PROJECT'S FINANCIAL FRAMEWORK

3.3.A. Original Recommendations from the 2009 Auditor General's Report

5. *We recommend that the Direction des systèmes d'information of Service des immeubles et des systèmes d'information [now the STI], in conjunction with the Service des finances, complete the financial [framework]. Upon completion, it should request the assistance of the Direction générale in presenting this [framework] to the municipal authorities for approval.*

3.3.B. Findings

In our 2009 report, we indicated that no financing package had been prepared before the contracts were awarded and that the \$50-million savings estimate was unsubstantiated. The decision-making summary had stipulated that the savings would be generated primarily by landline telephony services and were largely predicated on the use of IP telephony.

In addition, we reported that we were not able to obtain documents supporting the distribution of contract-related expenses between the three-year capital expenditures program (TCEP) and the operating budget. The decision-making summary indicated that \$33 million in expenses would be allocated to the TCEP and the rest to the operating budget.

We also reported that following the appointment of a new head of the DSI (now the STI), a draft financial framework for the project was being developed.

Our analysis of this framework demonstrated that the forecast project costs already equalled the budget initially authorized by the authorities, including the 20% contingency reserve for the delivery of additional goods and services.

Based on these findings, we recommended that the DSI and the Service des finances complete the financial framework for the project and then, in conjunction with the Direction générale, present it to the municipal authorities for approval.

During our follow-up, we discovered that the financial framework is still incomplete and so was never presented to the municipal authorities for approval.

There are several factors that explain the STI's delay in completing the financial framework. In our 2009 report we indicated that a JIC had been set up and mandated to come up with solutions to the disagreements between the city and TELUS. We felt that the resolution of these issues stood to have major consequences on the project's financial framework. Some of these issues are still being discussed by the JIC.

We found that most of these issues have been resolved, but discussions are ongoing between the city and TELUS via a new committee, whose mandate is focused exclusively on settling problems of a financial nature.

There is another factor that must be taken into consideration. As mentioned in our 2009 report, the city does not have a complete, up-to-date inventory of all its telephone lines and network outlets along with their locations. As a result, the city has had to establish an inventory of its telephone lines and network outlets as the various migration operations have been carried out. Because the migration process is not yet completed, the city's final inventory is unknown, thereby causing further delays in the completion of the financial framework.

Recommendation #5 stated that the financial framework should be completed in conjunction with the Service des finances. In this regard, the Service des finances insisted on obtaining a financial framework that could be used to compare previous contract costs and costs associated with new contracts, with a view to calculating the resulting savings. However, the Service des finances was unable to compile all telecommunication service costs incurred before the contracts were awarded. As a result, it is impossible to show that the new contracts have yielded the savings announced in the decision-making summary.

We understand that the Service des finances did not think it was the right time to be actively involved in the development of the financial framework and preferred to review the framework only once the migration process had been completed and the final inventories had been established. However, the Service des finances did confirm to us that they would report on the financial framework to authorities.

Given that the financial framework has not been finalized, we cannot evaluate whether it is comprehensive in scope or whether the authorized budget is sufficient. In addition, because this is a follow-up exercise and not a detailed audit, we did not perform an exhaustive review of all of the factors that might influence the financial framework. Furthermore, in order to ensure Recommendation #5 is still relevant, we examined the changes in the main findings indicated in our 2009 report that led us to make the recommendation in the first place. The next part of the report will therefore explore the elements that were already identified and that were expected to change:

- IP telephony migration target
- underestimation of the number of network outlets
- CET operating expenses
- contract awarded to the city's former service supplier

IP TELEPHONY MIGRATION TARGET

As mentioned above, the decision-making summary on the contract awarded indicated that the main cost savings would involve landline telephony and were largely predicated on the use of IP telephony.

To date, 6,989³ IP lines are operational, compared with the initial forecast of 15,000 lines, as stated in the contract specifications. The result is a negative variance of 8,011 lines (53%).

The impact of this negative variance is that the city will have to assume an additional cost of \$7.48 million (before taxes) for the remaining term of the contract, i.e., four

³ Figure calculated by adding the number of IP telephone lines at Réseau Accès Montréal (400), the SSIM (290) and others listed in Table 2 (6,299).

years, because according to the initial forecasts, the migration was supposed to have been completed after the third year of the contract. However, with 8,011 fewer lines, the city will not have to purchase the equivalent number of IP telephones, the estimated cost of which would be \$1.15 million (before taxes). This amount would have been allocated to the TCEP.

There are various reasons why the target in the decision-making summary could not be met. As Table 4 shows, IP telephony becomes beneficial from an economic perspective only when an IP telephone is coupled with a workstation. However, as we mentioned in our 2009 report, not all telephones can actually be migrated to IP telephony. If they cannot be coupled with a workstation, migration is not possible. This is the case, for example, for telephones in waiting rooms or conference rooms and those where restricted workstation access precludes this possibility.

Table 4—Telephony Charges

Monthly charge	TELUS Centrex	TELUS IP telephony (with workstation)	TELUS IP telephony (without workstation)
Line ¹	\$28.13	\$8.70	\$8.70
Network outlet	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$19.00</u>
Total – Cost of telephone	\$28.13	\$8.70	\$27.70

¹ Includes voice mail.

The presence of telephones that cannot be migrated to IP telephony does not explain in and of itself why the CET has not been able to achieve the deployment target established in the specifications. The IP telephony deployment strategy the DSI established at the time did not take into account the unique characteristics and operational limitations specific to an organization as complex as the city.

In this context, it is not surprising that several of the city's units have not been able to comply with this strategy, including:

- SPVM
- Centre d'urgence 911
- paramunicipal corporations and associated bodies

In the case of the SPVM, it is important to recall that the specifications indicated that landline telephony services, including the migration to IP telephony and data transmission services, needed to be available for the SPVM based on a per-outlet service model.

In this regard, we pointed out that there was a considerable financial risk involved if the SPVM did not subscribe to the per-outlet service model. As we suspected, security policies that govern the SPVM, including those issued by the Royal Canadian Mounted Police and the Sûreté du Québec, prevent major components of the SPVM's telecommunications network from being operated or managed outside of its security perimeter.

As a result of this situation, the per-outlet service model was not selected, and the SPVM will continue to manage and assume the costs of its own network, including the costs of maintaining custom connections.

In the case of the Centre d'urgence 911, we mentioned in our 2009 report that a disagreement persisted on how to handle so-called "administrative" telephone lines used by 911 operators to communicate with the emergency response network.

A subsequent risk and impact analysis on how the 911 situation should be handled showed that technical considerations associated with the existing operational model require that the lines used to communicate with the emergency response network continue to use Centrex technology and be serviced by the former supplier.

The city will therefore endeavour to reach a private agreement with its former supplier in order to maintain this service. This agreement was not in the original plan.

In the case of paramunicipal corporations and associated bodies, we indicated in our 2009 report that a problem had been detected during due diligence following an analysis of the telephone line inventory report that the city provided during the call for tenders. This analysis showed that a large number of Centrex lines belonged to associated bodies or paramunicipal corporations rather than to the city itself.

When the former supplier of telephone services refused to transfer these lines on the grounds that they did not belong to the city, letters were sent to the associated bodies and paramunicipal corporations to obtain their agreement.

During our follow-up, we noted that 458 Centrex lines belong to bodies and corporations that have chosen to adhere to the contract. These lines cannot be migrated to IP telephony because the bodies and corporations do not belong to the city data transmission network, which is a prerequisite condition to any such operation.

UNDERESTIMATION OF THE NUMBER OF NETWORK OUTLETS

We noticed an inconsistency in the requirements outlined by the city in the specifications. The city requested the migration of 15,000 Centrex lines to IP telephony, but it indicated that only 9,555 network outlets were required. The problem is that every IP line requires the use of a network outlet. We mentioned in our report that this oversight would increase project costs by a substantial margin. Incidentally, TELUS had also noted this variance during due diligence and requested that additional network outlets be added in order to meet city requirements.

We also found that the number of outlets indicated in the specifications had been underestimated, as a large number of computer peripherals (printers, photocopiers, etc.), which require a network outlet to operate, had been omitted.

As part of the negotiations held by the JIC, it was decided that the final number of network outlets required by the city would be determined following the city's planned streamlining operation. The operation did in fact lead to a significant reduction in the number of network outlets, but it also confirmed our finding that the city had drastically underestimated its needs in its specifications.

As Table 2 shows, the number of network outlets is currently 14,316, and this could climb to 15,000. We estimate that the city will therefore have to assume an extra expense of \$12.7 million (before taxes) over the duration of the contract.

OPERATING EXPENSES FOR THE CENTRE D'EXPERTISE EN TÉLÉCOMMUNICATIONS (CET)

In our 2009 report, we indicated that there were no funds allocated for CET operating expenses in the initial project budget. The executive committee subsequently authorized an additional \$5.7 million to be credited to the project's TCEP account to fund CET operations during the migration phase.

The operating expenses attributed to the CET's TCEP account between 2008 and 2011 amount to \$7.3 million. Over and above these expenses will be the costs related to the permanent structure of the CET, which was being set up during our follow-up activities.

Our estimates put the total cost of this permanent structure at least \$10.5 million over the remaining term of the contracts. This amount takes into account the 14 permanent positions that were confirmed in the STI operating budget for 2012 but excludes the other positions anticipated in the new CET organizational structure.

Total CET operating expenses will therefore be \$17.8 million. However, management expenses for CET operations will be at least 16.5% of the value of the awarded contracts. We consider this to be a reasonable percentage under the circumstances, given that this is a transformation project and that it is common practice with IT projects to earmark 15% of the value of a contract for management expenses.

CONTRACT AWARDED TO THE CITY'S FORMER SERVICE SUPPLIER

As we indicated earlier, owing to technical constraints, not only must the lines used by the Centre d'urgence 911 to communicate with the emergency response network continue to use Centrex technology, they must also continue to be serviced by the city's former supplier.

Because there is currently no contract in place with the former supplier, it now charges a monthly rate that is twice what the city paid previously for these lines.

In addition, the city indicated in its data transmission service specifications that the cost of the copper cables used for security and telemetry applications would continue to be supervised by the city. In the decision-making record submitted to elected officials when the contracts were awarded, however, there was no mention of city costs for maintaining these connections. Moreover, as is the case for the lines used by the Centre d'urgence 911 to communicate with the emergency response network, the service continued to be provided by the former supplier, even though the supplier no longer had a contract with the city.

In an attempt to rectify the situation, the CET entered into negotiations with the former supplier, and an agreement seems imminent. Based on the information we obtained, the city is planning to award its former supplier a contract valued at \$1.8 million per year (before taxes) for as long as these services need to be maintained.

We will now discuss certain findings made after our 2009 report that have had or may have significant repercussions on the financial framework:

- Streamlining needs (Operation Housekeeping)
- Repercussions of unused services
- TCEP
- Benchmarking

STREAMLINING NEEDS (OPERATION HOUSEKEEPING)

As previously stated, it was decided that the final number of network outlets required by the city would be established once the city had completed its planned streamlining operation.

As a result of this streamlining, commonly referred to as Operation Housekeeping, 472 telephone lines were disconnected, representing total savings of \$637,000 (before taxes) over the remaining duration of the contract. In addition, 5,120 unused or unnecessary network outlets were disabled, thereby generating \$14 million in savings (before taxes).

Moreover, we noted that the lack of an up-to-date inventory meant that, for several years, the city has been paying for telephone lines and network outlets it no longer needed. Operation Housekeeping has therefore helped optimize telecommunications facilities and cut down on costs the city would have had to pay under the terms of its outsourcing contracts. We would like to stress that this is a concrete example of one of the strategic objectives of the outsourcing project that falls outside of the scope of contract awarding criteria but that nevertheless has a significant impact on the financial framework. This underscores the importance of regularly updating, prioritizing and reporting on project objectives, as we pointed out in sections 3.1 and 3.2.

REPERCUSSIONS OF UNUSED SERVICES

In its data transmission specifications, the city indicated its desire to take advantage of recent technological advances.

Among other things, the city mentioned its wish to provide wireless data transmission using Wi-Fi technology to connect to its local network.

Although this service is included in the specifications, a disagreement arose in the interpretation of the specification clauses pertaining to the deployment of Wi-Fi hotspots. At the time this report was written, we were not in a position to assess the financial impacts of this situation.

Given this finding and taking into account previous deployment experiences, we believe there is a risk that new financial consequences may arise when previously unused services are deployed. This impact will need to be clarified when the financial framework is being developed.

THREE-YEAR CAPITAL EXPENDITURES PROGRAM

As mentioned earlier, we indicated in our 2009 report that we were not able to obtain documentation to establish the amount that had been allocated to the TCEP.

During this follow-up, we analyzed the variances in this account and concluded that the total authorized credits grew from \$33 million to \$39.3 million. The increase is in large part attributable to the capitalization of the CET's \$5.7-million operating expenses.

The use of these credits corresponds to \$17.6 million in expenses and \$635,000 in commitments, primarily associated with:

- CET operating expenses for 2008 through 2011
- installation expenses for new network outlets
- cost of acquiring IP telephones
- expenses of taking over network outlets from TELUS

We feel that, based on the nature of the expenses recorded to date, the fact that the use of these credits has been strictly limited to capitalizable expenses and the migration status, the \$21-million balance that is currently available in the account is too high, considering the anticipated project expenses. It will therefore be necessary to establish in the financial framework whether the TCEP should be reduced accordingly, either by recommending a reduction in the authorized funds or by proposing that they be transferred to the operating budget.

BENCHMARKING

In order to ensure bid prices are in line with market prices, the city's specifications contain a clause that indicates that once a year, on the anniversary date of the contract, it is entitled to request an external comparative cost analysis of services provided. With this clause, the city wanted to ensure it could benefit from a reduction in costs in the event market prices fell below the winning bidder's prices, particularly as a result of declining technology prices.

A benchmarking clause in these types of contracts is clearly a good idea. However, it can present a number of application challenges. For one, a disagreement arose between the city and TELUS about the scope of the first benchmarking operation in 2011 and how binding the benchmarking firm's recommendations would be in relation to the unit prices indicated in the contract.

Consequently, the city may not gain the additional assurance it initially hoped to have when it incorporated this benchmarking clause into the specifications.

3.3.C. Conclusions

We consider that implementation of Recommendation #5 has not been completed.

Delay in completing the financial framework can be mainly explained by the difficulty of establishing reliable projections for project costs before the migration and takeover process is complete, especially as the STI's current management has encountered a number of stumbling blocks and challenges resulting from several major flaws in the telecommunications services outsourcing project from the outset. Moreover, the STI was required to devote a great deal of effort to developing the structure of the framework and compiling data with limited resources and minimal support from the Service des finances.

Our follow-up also confirmed the findings contained in our 2009 report on the main drivers of cost increases as well as decreases in estimated savings. These include significant variances in the quantities listed in contract price schedules, parties' differing interpretations of contract specifications and the omission of management expenses, in particular expenses related to the CET.

Other factors that have had or may have significant repercussions on the financial framework have emerged since our 2009 audit. The needs streaming operation initiated by the STI led to a substantial reduction in costs that would have otherwise been payable under the terms of the contracts. The potential activation of as-yet unused services could have the opposite effect in terms of spending, and the difficulties in applying the benchmarking clause may prevent the city from enjoying guaranteed competitive pricing throughout the duration of the contracts. Lastly, the surplus in the TCEP account will in all likelihood be re-credited to the operating budgets of the business units.

We realize that it is preferable to wait for the migration and takeover process to be completed before finalizing the financial framework. However, the outline for

this framework can be established in the meantime. We believe that this outline must encompass all cost factors associated with authorities' adoption of the decision-making summary for the telecommunications services outsourcing project so the use of authorized funds can be carefully tracked and reported.

These factors include services that were initially charged under the terms of the contracts, requests for changes and additions to these services, issue-solving costs, services provided by third-party suppliers initially included in the outsourcing project and management expenses for the project.

3.4. MANAGEMENT FRAMEWORK FOR CONTRACTS

3.4.A. Original Recommendations from the 2009 Auditor General's Report

6. *We recommend that the Direction des systèmes d'information of the Service des immeubles et des systèmes d'information [now the STI] immediately develop its management framework to manage outsourcing contracts in the operational phase. Specifically, it should:*
- *identify activities to undertake, according to the nature and objectives of these contracts;*
 - *identify gaps between the skills needed to undertake these operations and the available resources;*
 - *identify and design the controls to be instituted to ensure compliance with the service levels, security requirements and billing rules for services provided to client units;*
 - *establish, in conjunction with the Service des finances, the operating budget for this organizational framework and incorporate it into the corresponding financial framework.*

3.4.B. Findings

As the migration toward the new service supplier was still in progress at the time of our follow-up, the temporary structure of the CET was still in place.

However, some work has been done on setting up the organizational structure for those who will eventually take over from the temporary CET. As a result, the permanent CET should gradually become active in early 2012, as migration operations progress.

At the time of our follow-up, 14 permanent positions had been confirmed in the 2012 budget. In addition, the permanent CET structure includes five temporary positions to ensure oversight, prepare future calls for tenders and support the problem-solving process. This structure also includes various matrix-type positions that will be funded by the other STI divisions as a result of the city's recovery of firewall rule management (see section 3.8 for further details). However, we understand that the CET's final organizational structure had not been defined at the time of our follow-up, owing in part to the budget cuts imposed on the STI for 2012.

In our 2009 report, we indicated that implementing a new management framework would require the development or acquisition of new expertise, since it would entail changing from a method of managing operations to a method of managing outsourcing contracts. We believe that the STI's commitment and efforts in terms of the migration and rollout of the new management framework will be key to raising the level of outsourcing knowledge among in-house resources, thereby reducing the risks associated with lack of expertise.

Moreover, efforts have been undertaken, in conjunction with TELUS, to review the current governance model, transforming it to a "post-implementation" model, which will involve revamping existing committees and creating new ones, including:

- Performance Management Committee, whose mission will be to ensure that operational results are consistent with performance and continuous improvement objectives
- Contract Oversight Committee, whose mission will be to ensure compliance with contractual provisions and requirements and to update contract terms to better meet the city's changing needs
- Network and Telephony Evolution Committee, whose mission will be to guide technological advancements, track and advise on technology-related developments and monitor network and telephony architecture, including security

Implementation of the governance model had not yet started at the time of our follow-up.

The city also indicated in its contract specifications that it wished to review its operational processes, based on ITSM⁴ IT service management best practices. Accordingly, the specifications contained a non-exhaustive list of processes that the winning bidder was required to include in the services it delivers to the city.

TELUS, in conjunction with the city, therefore developed a compendium of operational processes and procedures (OPPs), including the 15 OPPs that will be used in the post-implementation phase.

The development of the 15 OPPs did, however, require a major commitment of city resources and experienced repeated delays. At the time of our follow-up, 14 of the 15 OPPs had been approved by the city, and from our understanding, some of these were only partially implemented because of ongoing modifications.

The city also wanted TELUS to provide metrics, reports and score cards to ensure that the required levels of service were being respected. However, TELUS has yet to produce tools that correspond to the requirements outlined in the specifications. As a result, the city has not been able to effectively administer its telephony and data transmission contracts since they were awarded.

The city had also asked TELUS to set up an inventory and configuration management database (ICMD) accessible to key city employees in real time and updated regularly by TELUS. This database is an essential element in ensuring the effectiveness of the 15 OPPs to be used in the post-implementation phase.

Among the functions of the database are:

- provide benchmarking information to assist with evaluation, change planning and deployment, and production
- help manage capacity

⁴ Information Technology Service Management.

- help incident and problem resolution
- evaluate the impacts of incidents and problems to determine which services or clients are affected
- improve management of communications and resources to be implemented when an incident occurs
- play a key role in terms of managing TELUS's invoices for services provided to the various city units, in accordance with the terms of the telephony and data transmission contracts

We noted, however, that TELUS has not yet produced a database that meets the criteria set out in the city's specifications.

In our 2009 report, we also indicated that the city wished to set up a model that would enable it to pass on telecommunications costs to its business units based on a shared services centre (SSC) model. However, inadequate definition of the billing model in the specifications caused the city and TELUS to interpret this need differently. As a result, TELUS did not submit a billing model consistent with the city's requirements, and this delayed implementation of the user-payer model.

During our follow-up, we noted that in early 2011 TELUS set up an online tool to give client units access to their billing details. However, ongoing misunderstandings occurred between the city and TELUS about the required deliverables for this tool, in particular those related to:

- a feature that allows users to approve invoiced items
- the possibility of developing various access profiles within the same client unit
- the possibility of viewing network outlet invoicing details for each client unit

Given the delays and other obstacles encountered by TELUS in meeting these needs, the CET was required to engage in the labour-intensive task of manually sorting through the details for each network outlet on a unit-by-unit basis so that it could use this information to implement the user-payer model. The user-payer model needed to be rolled out for 2012, because the STI's budget will no longer have the required budgets.

Considering the above, the STI decided to withhold amounts for per-outlet service (network outlets) from its monthly payments, since TELUS had not provided the management tools as required in the specifications.

We are concerned about the sustainability of this tool once the current contracts have expired, given the efforts the city has invested in its implementation and the fact that the tool is administered by TELUS rather than city.

3.4.C. Conclusions

We consider that the actions that have been undertaken to implement the processes and the organizational structure for contract management purposes are in line with Recommendation #6.

We also consider that STI efforts to identify skill-related gaps are in line with Recommendation #6. The STI will have to pay careful attention to safeguarding the expertise acquired in this regard, given the anticipated staff departures in the coming months.

However, since TELUS has not yet provided the management tools required in the contract specifications, and since the permanent CET's budget authorizations are not yet completed or incorporated into the financial framework, we do not consider that Recommendation #6 has been completed.

3.5. CONTINUITY AND EVOLUTION OF THE NETWORK

3.5.A. Original Recommendations from the 2009 Auditor General's Report

- 7. We recommend that the Direction des systèmes d'information of the Service des immeubles et des systèmes d'information [now the STI] institute a process for watching and monitoring the evolution of the network and related equipment to ensure their survivability.*

3.5.B. Findings

As we mentioned in our 2009 annual report:

“The specifications included in the outsourcing contracts state that the city wishes to have an evolving network that will meet its current and future needs. The winning bidder is responsible for installing, maintaining and replacing the network’s equipment at the bidder’s own expense for the duration of the contract and ensuring that the city owns the equipment even if it is housed at the bidder’s facilities.”

We also mentioned that the winning bidder would become the principal contractor for the network’s management and evolution. In this respect, our report emphasized the necessity for the city to have monitoring ability to maintain a current inventory of installed or replaced equipment and develop a detailed protocol for the transfer of assets when contracts end. We also pointed out, however, that these mechanisms had not yet been implemented.

In response to this need, the specifications required the supplier to maintain an up-to-date ICMD of installed and replaced equipment, which the city could access in real time. However, our follow-up showed that TELUS has still not provided city representatives with access to any such ICMD.

We should point out, though, that TELUS recently, in an endeavour to comply with these requirements, submitted Excel files containing the list of city equipment managed by TELUS as well as the services used by the city. We do not feel these files are sufficient to meet the requirements outlined in the city’s specifications, i.e., an up-to-date, real-time database with detailed information on equipment updates. Without this information, the reports produced by TELUS will likely be of little use.

Because TELUS has failed to deliver a ICMD, the CET has been forced to develop an in-house database to monitor network outlet management.

The Network and Telephony Development Committee will also have to track technology-related developments and monitor network and telephony architecture. At the time this report was written, this committee had not yet begun its work.

3.5.C. Conclusions

Although some actions have been taken to implement the required processes, **we consider that Recommendation #7 has not been completed**, given the lack of a ICMD, which is an essential component.

3.6. DISASTER RECOVERY PLANS

3.6.A. Original Recommendations from the 2009 Auditor General's Report

8. *We recommend that the Direction des systèmes d'information of the Service des immeubles et des systèmes d'information [now the STI] obtain from TELUS Québec the required disaster recovery plan as per the specifications and a promise that this plan [can] be tested annually.*

3.6.B. Findings

As we mentioned in our 2009 annual report, *“the winning bidder must demonstrate that it has the facilities and disaster recovery plan to ensure 24/7 operation of the telecommunications and telephony services that the city requires.”* However, at that point, the city had not obtained the disaster recovery plans as indicated in the specifications, and there were no tests to be checked. By the end of our follow-up, there was still no evidence of either.

Moreover, in order to minimize the need to resort to a disaster recovery plan, the city must also adopt an operational continuity plan that includes mitigation measures to be instituted for critical operations.

In a previous audit report, we recommended that a guideline on this issue be produced and adopted by the Direction générale. In response to this recommendation, the city's Comité de sécurité de l'information developed a guideline on IT service continuity management. This was submitted to the Direction générale for approval in April 2009, but it has yet to be ratified.

The lack of a guideline in this regard has done little to foster awareness among the administrative units about the necessity of adopting a continuity plan for their IT services.

In the past, the Centrex landline services provided by the previous supplier had always been considered secure and reliable because they ensured continuity of service during a power outage. However, the migration of the city's telephony system to TELUS's technology solutions could have an impact on the continuity of this service, especially given that IP telephony service is dependent on the data transmission network.

In order to help city units assess the consequences related to the migration to TELUS's technology solutions and enable them to identify critical functions for continuity planning purposes, the CET has prepared a supporting document that outlines risks involved in migrating to TELUS systems and IP technology:

- For Centrex telephony services
 - There is no redundancy for the city's TELUS equipment deployed at the local level.
 - The Centrex equipment deployed at the local level by TELUS can operate on a stand-alone basis in the event of an extended power outage, but only for a limited time, and this time can vary.
- For IP telephony
 - IP telephony is highly vulnerable to power outages or serious interruptions in the data transmission network.
 - There are many more potential points of system failure (e.g., network outlets, local switches, links serving the city's sites).
 - The CET does not have any metrics or background information on the frequency or duration of data transmission infrastructure downtime, or the operational repercussions of a slowdown or deterioration in service.

According to this document, the units must develop a business continuity plan to be in a position to fulfill their needs in the event of an interruption affecting their telephony or data transmission systems. This plan should strike a balance between the risk of an

incident and its potential operational consequences and the costs related to the deployment of a continuity solution.

However, this document was not circulated to the various units prior to their migration. The choice of technology solutions offered by TELUS, especially in terms of migrating to IP telephony, was presented more from an angle of cost-effectiveness than one of risks of system failure or interruption in telephone services.

Based on these findings, we sought out additional information on the migration process for activities and administrative units we considered to be critical.

We therefore focused on:

- SSIM
- SPVM
- Centre d'urgence 911

In response to SSIM requests, the CET issued an addendum to the risk and incidence analysis that had been produced. According to this addendum, the SSIM can, after an evaluation, retain its Centrex copper pairs for sites hosting critical business functions related to operational continuity.

The SPVM did not express any particular need in terms of the continuity of its telephony service. However, it is important to note that the SPVM decided not to adhere to the “per-outlet service” model, which means that it will not be migrating to an IP telephony system.

Moreover, both the SSIM and SPVM are equipped with radiocommunication devices, which minimizes the impact of an interruption in telephone service on their operational activities.

As for the Centre d'urgence 911, all lines used to route emergency calls to 911 were excluded from the call for tenders, in accordance with the law. In addition, it was decided for compatibility purposes that “administrative” lines used by 911 operators to

communicate with the emergency response network would continue to be managed by the former supplier.

Throughout this section, we have discussed the risks involved in IP telephony, including the fact that service is dependent on the availability of the data transmission network. Activity reports issued by TELUS for August, September and October show a high number of electrical-related incidents that affected the data transmission network. However, there is no information in these reports on the scope or duration of these incidents.

One of the methods used to compensate for electrical failures is to equip network devices with an uninterruptible power supply (UPS). A UPS, usually a combined battery and inverter, provides the electricity required to power the equipment it is connected to and protect it against voltage fluctuations from the electrical distribution network.

This problem was an issue for the city and TELUS. TELUS has agreed to study the effect of power outages on service availability. In the event of recurring outages, power fluctuations or electrical surges that compromise equipment or service, TELUS may install UPSs. In such a scenario, the UPSs would be supplied, installed and maintained by TELUS. Based on the information we obtained, TELUS has not yet carried out this study.

Lastly, IP telephony and voice message solutions must meet the performance requirements outlined in the specifications, i.e., provide a very high availability ($\geq 99.99\%$).

The stability of these solutions is a point of concern for us. There were four major service interruptions in the IP telephony system in 2011, and five major interruptions in the voice mail system (two in 2010 and three in 2011). We consider an interruption to be major when the users in a city department are affected.

3.6.C. Conclusions

Based on our follow-up, **we consider that Recommendation #8 has not been completed**, in that TELUS has not demonstrated it has disaster recovery plans in place that comply with the requirements in the contract specifications and **the city has not received confirmation that disaster recovery plan tests can be checked annually**.

In terms of operational continuity, we do not feel that the CET has done enough to educate the administrative units about the new risks involved in migrating the city's telephone service to TELUS's technology solutions. This is especially important given that one of the project objectives is to encourage accountability and empowerment among client units.

However, our follow-up did confirm that migration-related risks of certain activities we deemed critical were less of a cause of concern than we had originally thought, given the decisions made by the business units in question.

3.7. EMERGENCY ACTION PLAN

3.7.A. Original Recommendations from the 2009 Auditor General's Report

9. *We recommend that the Direction des systèmes d'information of the Service des immeubles et des systèmes d'information [now the STI], together with the Centre de sécurité civile, set up a coordination plan in conjunction with TELUS Québec to avoid any delays in the execution of the plan for emergency measures when needed.*

3.7.B. Findings

In response to Recommendation #9, the STI produced a document entitled *[TRANSLATION] Centre de services – Telecommunications Emergency Measures*, which contains the processes adhered to by the Centre de services (CS) and emergency measures escalation lists for all stakeholders who could potentially be affected.

This document was validated by the Centre de sécurité civile (CSC). There is still a “grey” zone, however, that could cause delays in the execution of the emergency action plan. Given the respective service areas of the STI and TELUS, the latter being defined by its outsourcing contracts, it seems that the CET can step in only when the central departments or the boroughs of the former Ville de Montréal are involved, whereas the CSC is responsible for coordinating emergency measures for the entire island, including the reconstituted municipalities and the boroughs created from the former suburban municipalities.

When the emergency action plan is executed, the CSC delegates emergency response tasks to various stakeholders, including the STI, which is responsible for computer and telecommunications support. Since the municipal demergers, however, although the STI has retained the responsibility for certain agglomeration-oriented activities, it no longer has the power to step in where the reconstituted municipalities and former suburban municipalities are concerned.

This could potentially interfere with the smooth execution of the emergency action plan in certain circumstances, e.g., if a related municipality is involved.

3.7.C. Conclusions

We consider that Recommendation #9 has been completed, since an emergency escalation procedure within the scope of TELUS contracts.

We nevertheless reiterate the importance of holding a surprise drill to verify the effectiveness of the system.

As for the problem of the STI’s limited power to respond to requests made by the CSC, although this issue exceeds the scope of this mandate, we feel that this situation should be looked into by the Direction générale in conjunction with the authorities concerned, in order to prevent any misunderstandings that could compromise the effective execution of the emergency action plan.

3.8. MANAGEMENT OF PROJECT SECURITY

3.8.A. Findings

In our 2009 report, we referred to an issue related to TELUS's taking charge of data transmission contract security aspects. An agreement was concluded by the TELUS-city steering committee in November 2010 in this regard. Given how significant the impacts associated with the resolution of this issue are, we decided to include it in this follow-up operation.

Diverging positions and interpretations of the two parties' responsibilities emerged at the due diligence phase. On one hand, the city stated in its specifications that the winning bidder would be the main entity in charge of operational security, thereby confirming the city's intention to outsource its network security management functions. On the other hand, TELUS raised the issue that the specifications were not sufficiently explicit in this regard and that there was room for interpretation. Specifically, TELUS maintained that setting and changing firewall rules had not been requested by the city, and this added functionality would require an amendment to the contract that it assessed at \$4.7 million.

A second element also came into play. During the question-and-answer session following the launch of the call for tenders, the city indicated that it had nine firewall servers that were to be taken over by the winning bidder. However, due diligence revealed the city actually had 18 servers. This difference alone cost the city an estimated \$1.6 million.

As a result, the main focus of these negotiations became financial, as this excerpt from the agreement indicates: *[TRANSLATION] "All adjustments shall be carried out without any extra disbursements between the two parties."* Under the terms of this agreement, TELUS committed to provide guidance in the form of security specialists to assist the city in maintaining and developing its firewall architecture. The agreement also indicated that TELUS is responsible for the management of all of the city's firewall servers, including:

- monitoring operations

- server and software upgrades
- smooth running of the software and operating system

However, the city agreed to take back responsibility for setting and changing firewall rules and for maintaining the necessary staff to carry out these tasks. In assuming this responsibility, we feel that the city became mired down in the daily management of an activity (the means) it sought to outsource. This decision could have far-reaching consequences, since it also means that the city potentially accepts responsibility in the event of a security-related incident or the non-compliance with levels of service in which security rules may be involved. Penalties and redress considerations could become more complicated as a result.

In addition, the city is still responsible for documenting and approving security architecture. The city, however, does not possess any documentation in this regard, which means that security problems are handled on a case-by-case basis, with no overall perspective and no assurance of consistency in the way subsequent incidents are handled.

In order to ensure that all consequences of the agreement had been considered, the city hired an external firm in June 2011 to analyze the feasibility of sharing operational tasks with TELUS.

The firm's report confirmed that this approach is feasible, but it indicated that the city was exposing itself to security risks, because the firewall rules had been developed with a client service mindset rather than in the context of a strategy aimed at safeguarding the integrity of the city's information systems and protecting its assets.

The firm stated that this situation led to a less-than-optimal approach to managing firewall rules, the direct consequence of which was the introduction of a large number of individual rules (more than 2,700), which is two to three times more than what is generally found in an environment of this type.

The STI has acknowledged the problem, given it due consideration and initiated a process to retain the services of a firm specializing in corporate governance and management controls related to information security.

3.8.B. Conclusions

We are strongly in favour of the STI decision to hire a firm to review the governance and management aspects of information security.

Moreover, given the security-related responsibilities the city is now required to deal with, we feel that the STI should immediately establish a network security architecture to address the problems associated with the management of firewall rules, among other things.

4. OVERALL CONCLUSIONS

Table 5 summarizes the status of the nine major recommendations as of the end of our follow-up.

Table 5—Status of Major Recommendations

Recommendation	Under way	Completed
1. Prioritization of outsourcing objectives – Elements under the Direction générale’s purview		*
2. Prioritization of outsourcing objectives – Elements under the STI’s purview		✓
3. Project governance – Elements under the Direction générale’s purview	✓	
4. Project governance – Elements under the STI’s purview		✓
5. Project’s financial framework	✓	
6. Management framework for contracts	✓	
7. Continuity and evolution of the network	✓	
8. Disaster recovery plans	✓	
9. Emergency action plan		✓

* Withdrawn; not carried out on a timely basis.

There has been significant delay in implementing these recommendations, which should have been completed by the time we resumed our follow-up in the fall of 2011. From our

perspective, this delay is attributable in part to the fact that the STI has encountered a number of stumbling blocks and challenges resulting from several major flaws in the telecommunications services outsourcing project from the outset. In addition, TELUS has still not produced all of the management tools and deliverables required in the contract specifications so that the city can measure the quality of the services provided, be reassured about the soundness of the disaster recovery plans in place and monitor network developments. These points are all essential to the successful implementation of recommendations #5, #6, #7 and #8.

We did find, however, that the STI has made great strides in rectifying the situation we encountered during our 2009 audit and we consider their progress to be satisfactory in many regards.

We feel that three key issues must be resolved to ensure the effective management of the outsourcing project for telecommunications services.

First, from a governance point of view, without a current prioritized list of strategic objectives, it is impossible to determine whether the consensus and decisions embraced by the JIC are in line with a strategic, consistent vision of telecommunications services within the city. We therefore believe that there is still a significant risk that telecommunications services cannot be optimized from a financial or operational perspective, which will be particularly worrisome when the current contracts expire and it is time to prepare the next set of specifications.

Further to the governance issue, the fact that the Direction générale has not implemented a formal framework for reporting to authorities, combined with the difficulties associated with developing the financial framework, means that municipal authorities are only partially aware of how the more than \$100 million authorized for this project is being used. Similarly, they are only partially aware of the status of the corresponding issues and risks.

Given the various cost increases that have arisen because of variances in the quantities indicated in the contract specifications, it is troubling that the elected officials who

authorize these funds are still uninformed as to their use three years after these contracts came into effect.

Finally, so long as TELUS does not produce the management tools and disaster recovery plans required in the contract specifications, we feel that the city is not in a position to ensure the compliance of the outsourced contracts or the efficient, cost-effective delivery of its telecommunications services.

5. COMMENTS FROM THE BUSINESS UNITS

5.1. SERVICE DES TECHNOLOGIES DE L'INFORMATION

[TRANSLATION] “We reviewed the [TRANSLATION] Outsourcing Project for Telecommunications Services—Follow-Up Audit Report. Although, overall, we agree with the contents of this report, we would like to take advantage of this opportunity to make a few comments.

These comments are not intended to contradict the findings of the report, simply to slightly amend them and provide additional information to shed further light on the context of the telecommunications services implementation project.

Reference: Introduction, D) Service Quality and Reliability:

‘ . . . several major interruptions in IP telephony and voice mail services in 2010 and 2011 have cast doubt on the stability of these solutions.’

Our work on the infrastructure system in 2011 has improved the situation compared with 2010. And some important upgrades were made in early 2012, which lead us to believe that these solutions will be much more stable in future.

Reference: The Project's Financial Framework, section 3.3:

We reviewed the initial financial framework to monitor the items that may modify it, including:

- initial scope of the contract, compared with the modified scope (central departments, boroughs, select paramunicipal corporations)
- user-payer principle for each of the services included in the contract
- separation of operating and capital expenses
- separation of city units and associated bodies
- reassessment of projections based on updated inventories
- refunds for third-party expenses from TELUS

In addition, in March 2012, we updated the financial framework for the contracts, based on the most recent inventories, and revised usage projections. As a result, we feel that the authorized budget is sufficient for the wireline services contract, with a favourable variance of more than \$5 million. However, for the data transmission contract, there is an unfavourable variance of almost \$3 million, which can largely be attributed to the underestimation of the number of outlets in the contract specifications and the SPVM's custom connections.

Service des finances management, in its response to the auditor general and the city manager, will include CET labour costs in the financial framework for the contracts.

Should services that are included in the specifications but are as yet unused be introduced at a later date, it will not automatically lead to disputes and financial repercussions. Most of the impacts of the delayed implementation of a new service will revolve around the need to update the services outlined in the specifications to account for recent technological advances.

An initial benchmarking operation was completed in December 2011. Based on the items included in the process, the city was able to confirm that most of the bid prices currently in effect meet the requirements in the contract, i.e., are not more than 15% higher than the reference market. For those items that do exceed the 15% mark, the city will obtain a slight reduction in price (evaluated at \$1,688 per month).

Reference: Disaster Recovery Plans, section 3.6:

Section 3.6 refers to a high number of incidents related to power supply that have affected the data transmission network, although no information on their scope or duration is provided. Despite the lack of detailed information about these incidents, the city can appreciate the number of electrical-related incidents and their repercussions. The city has made TELUS responsible for systematically reporting incidents of this nature. As soon as an incident affects a building, TELUS is to record the resulting information for each piece of equipment. For example, for a power outage that occurred at 4101, rue Sherbrooke Est, TELUS reported 18 incidents, since the outage affected 18 separate pieces of equipment (switches, severs, etc.). Furthermore, many short-lived outages have minimal repercussions on the network and do not compromise quality of service.”

5.2. DIRECTION GÉNÉRALE

[TRANSLATION] “We had the opportunity to talk to the head of the STI about the [TRANSLATION] Outsourcing Project for Telecommunications Services—Follow-Up Audit Report. He told us that by and large he agreed with your analysis and mentioned he had shared his comments with you.

Concerning the two recommendations you made to the Direction générale, we would like to reiterate that the adoption of the Cadre de gouvernance des projets et des programmes de gestion d’actifs municipaux, which the STI is implementing diligently, is designed to promote a clear understanding of the projects’ goals and the rigorous governance of each initiative.

As for the city’s optimization projects, the executive committee is aware of the objectives and savings telecommunications contracts pursue and, in March 2011, mandated the STI to continue setup operations, including those related to IP telephony. We therefore feel that the municipal administration is adhering to the management approach as implemented.

As you mention in your follow-up report, the head of the STI has ensured that the various city units have a clear understanding of the aims of the telecommunications contracts and agree to abide by them.

This issue has been brought up at the city manager's committee meeting on several occasions, and the STI has submitted various communications to department and borough administrations, as well as those responsible for telephony and data transmission services, to help ensure these objectives are met.

As for reporting, we can confirm that the head of the STI has submitted regular reports on the status of the project to the Direction générale and on more than one occasion to the executive committee.”

5.3. SERVICE DES FINANCES

Reference: The Project's Financial Framework, section 3.3:

[TRANSLATION] “We will work with the STI to finalize the financial framework, based on the most recent information. Once this framework has been completed, it will be presented to the city manager, with whom the terms and schedule for presenting it to authorities will be decided.”

6. COMMENTS FROM THE AUDITOR GENERAL

We noted that the comments made by the Direction générale, the STI and the Service des finances indicate their agreement with the contents of our audit follow-up report, which focused on the situation as of November 30, 2011.

However, in order to avoid any ambiguity in the understanding of the financial framework for the outsourcing project for telecommunications services, it is important to make the following clarifications, given the above-mentioned comments in this regard by the STI. In its comments, the STI confirmed:

“In addition, in March 2012, we updated the financial framework for the contracts, based on the most recent inventories, and revised usage

projections. As a result, we feel that the authorized budget is sufficient for the wireline services contract, with a favourable variance of more than \$5 million. However, for the data transmission contract, there is an unfavourable variance of almost \$3 million, which can largely be attributed to the underestimation of the number of outlets in the contract specifications and the SPVM's custom connections."

We understand that the cost projections in these contracts put estimated net savings at \$2 million. It is important to stress, however, that these savings include the use of the 20% contingency reserve for additional goods and services outlined in the authorized budget, which can be broken down as follows:

Table 6—Authorized Budget¹

Contract	Amount (including taxes)	20% contingency reserve (including taxes)	Total (including taxes)
Data transmission	\$47,483,284	\$9,496,656	\$56,979,940
Wireline telephony	\$35,000,790	\$7,000,158	\$42,000,948
Total	\$82,484,074	\$16,496,814	\$98,980,888

¹ Excluding cellular telephone services.

The STI also commented that:

"Service des finances management, in its response to the auditor general and the city manager, will include the CET labour costs in the financial framework for the contracts."

As we pointed out in our follow-up report, the outline for the financial framework must encompass all cost factors associated with authorities' adoption of the decision-making summary for the telecommunications services outsourcing project so the use of authorized funds can be carefully tracked and reported.

These factors include services that were initially charged under the terms of the contracts, requests for changes and additions to these services, issue-solving costs, services provided by third-party suppliers initially included in the outsourcing project and management expenses for the project.

In conclusion, based on the STI's updated contract cost projections and other factors such as \$17.8 million for the CET, which must be taken into account in the financial framework, we feel the budget as initially authorized will clearly be insufficient to cover the project costs.