



Report of the Auditor General of the Ville de Montréal to the City Council and to the Urban Agglomeration Council

For the Year Ended December 31, 2012

Infrastructure Work Timeframes

5.3

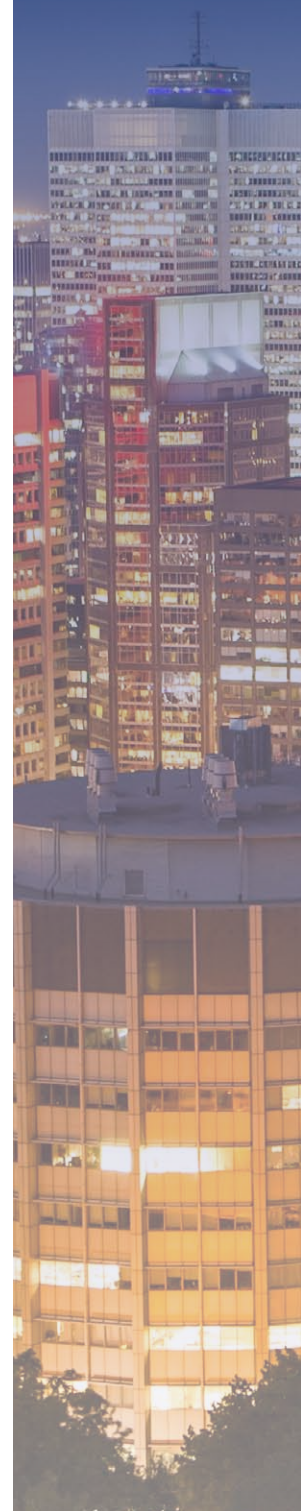


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List of Acronyms

CSEM	Commission des services électriques de Montréal	TCEP	three-year capital expenditures program
SITE	Service des infrastructures, du transport et de l'environnement		

5.3. Infrastructure Work Timeframes

1. Introduction

To achieve municipal infrastructure improvement objectives that require major investments, the central departments and boroughs of the Ville de Montréal (the city) plan collective infrastructure projects to determine and prioritize renewal work to improve the quality of the city's infrastructure and extend its useful life.

On a yearly basis, the city adopts a three-year capital expenditures program (TCEP) covering the infrastructure that is managed by its central departments, such as the Service de l'eau and the Service des infrastructures, du transport et de l'environnement (SITE), as well as the boroughs' own road infrastructure (roads, sidewalks) and water and sewer system rehabilitation programs.

The city hires contractors to carry out the construction work planned under the TCEP. In the case of work estimated at over \$100,000, the business units are required to issue a public call for tenders, in accordance with the *Cities and Towns Act*. The major steps involved in a public call for tenders process consist of preparing the call for tenders, calling upon the market, analyzing bids received, awarding contracts and managing them thereafter. Infrastructure work contracts are awarded to the lowest compliant bidder, and the bid price is the determining factor.

The documents making up the call for tenders¹ are used to document the project's technical aspects, and they enable contractors to prepare their bid within the legal, administrative and operational frameworks that govern project completion.

The presentation of a bid is equivalent to the bidder certifying that he obtained satisfactory knowledge of the documents, understood the documents and prepared his bid after having carefully evaluated the conditions that will apply to the work carried out. The bidder also certifies that he read and understood the supplementary clauses and understood the specifics regarding delays and applicable penalties.

¹ The call for tender documents are accompanied by bidder instructions and appendices that form integral parts of the call for tenders, i.e., the notice to bidders, tender forms, price schedule, special instructions, standardized instructions (which include the general contract provisions) and various technical fascicles as well as plans.

The administrative requirements are described in the call for tender documents in accordance with the city's needs. The general (2009 version) and supplementary contract provisions are integral parts of the call for tender documents that the contractor is required to sign.

These administrative provisions enable both the city's project manager and the contractor to whom a contract was awarded to efficiently complete the project and stipulate the timeframes, costs, change authorizations, penalties for lateness and non-compliance as well as acceptance of work.

2. Audit Scope

The objective of this audit was to verify that infrastructure work contracts signed with contractors stipulated completion timeframes, that the stipulated timeframes were met and that measures were taken when contracts were not completed on time.

Our audit covers infrastructure work carried out during the 2011 and 2012 fiscal years.

To this effect, we examined 17 projects (see Appendix 4.1) carried out by the following business units:

- Ville-Marie borough (2 projects);
- Villeray–Saint-Michel–Parc-Extension borough (2 projects);
- Saint-Laurent borough (2 projects);
- Rivière-des-Prairies–Pointe-aux-Trembles borough (2 projects);
- Service de l'eau:
 - Direction de l'eau potable (3 projects),
 - Direction de la gestion stratégique des réseaux d'eau (3 projects);
- SITE:
 - Direction des infrastructures (3 projects).

3. Findings and Recommendations

A book of specifications is a contract document that describes the project owner's expectations with respect to the contractor. It therefore consists of a document that describes—in the most specific and simple terms possible—the needs, requirements and obligations that the contractor is required to meet. The book of specifications sets out the general and supplementary contract provisions.

The general provisions are the contract's general administrative and technical conditions. The administrative conditions set out the administrative provisions that apply to a category of goods and services (e.g., the work schedule, the work start date, penalties for delays) whereas the technical conditions set out the technical provisions that apply to the performance of work of identical nature (e.g., the completion of rehabilitation work or lining work on the city's territory).

The supplementary provisions consist of special administrative and technical conditions. The administrative conditions set out each contract's administrative provisions whereas the technical conditions set out the technical provisions applying to the completion of all work deliverable under a contract.

The call for tender documents are comprised of bid forms, plans and specifications, addendums and bidder instructions that set out all of the conditions that bids must meet. These documents also include the general and supplementary contract provisions. Awarded contracts are made up of the call for tender documents and the winning bid.

During our audit of the 17 selected projects, we examined the clauses stipulated in the call for tender documents in order to gather information on the work completion timeframes and applicable administrative clauses.

The work completion timeframes stipulated in the documents make up the essence of the contract, and the contractor may be fined a penalty by the manager² simply for failing to complete the work on time.

3.1. Projects Completed Within the Initial Timeframe

3.1.A. Background and Findings

The conditions described in the call for tender documents reflect the needs, requirements and obligations that contractors must meet when preparing their bid and completing the work. The business units are responsible for following up on contracts to ensure that these conditions are met and that the information obtained is compliant. Also, corrective action must be imposed when these conditions are not met.

² The term "manager" refers to the person in charge who was appointed by the business unit manager and usually acts as the project manager.

The work completion timelines provided in the documents making up the winning bid become the timelines of the contract that the contractor agrees to meet. Thereafter, the manager may impose a penalty on the contractor simply for failing to meet these timelines.

The following documents are used to determine the number of days stipulated in the contract as well as the number of days actually taken to complete the work up to the provisional acceptance stage:

- the comprehensive schedule provided by the contractor and accepted by the project manager or his representative (this document becomes the contract schedule on the basis of which the start and completion of work are taken into consideration to impose penalties for failing to complete the work on time);
- the project manager's letter establishing the official start date for the work;
- the letters specifying when work will be interrupted and when it will resume should completion timelines overlap a winter period (from December to April);
- the letter confirming provisional acceptance of the work that the project manager sends to the contractor.

The work start and completion dates are based respectively on the work start order and the provisional acceptance of the work following a site inspection. In cases where it is not possible to determine an official work completion date from the provisional acceptance, this date is established on the basis of the work progress report (work completion schedule), the project engineer's report or the project manager's weekly report.

To this effect, we examined all of the documents enabling us to retrace the start and end dates for the work specified in the contract, the follow-up of work completion and any indication as to delays in completion. Where the contractor failed to meet the contract timelines, we also examined whether or not penalties were imposed.

A site start-up meeting is held once the contract has been awarded. The purpose of this meeting is to review the contract stipulations, timelines and clauses setting the penalties for delays. Thereafter, the city or the boroughs issue the order to start the work.

Concurrently with our analyses, we interviewed the managers responsible for these projects in order to have them validate the information that we had collected. Where infrastructure work projects had not been completed according to the schedule, as specified in the decision-making summary or the comprehensive schedule provided by the contractor in his bid or as provided during the start-up meeting, we asked for an explanation of the delays and the reasons justifying whether penalties were imposed or not.

In the case of eight of the 17 projects that we chose to audit, the work was completed within the initial timeframe, as stipulated in the infrastructure contracts signed with the contractors. Consequently, the city did not impose any penalties to the contractors who had worked on these projects. The latter are presented in Table 1 below.

Table 1 – Projects Completed Within the Initial Timeframe

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned ^a	Actual ^b	
Villeray–Saint-Michel–Parc-Extension borough			
PRR-11-03 \$671,823.45	July 25 to August 18, 2011 25 calendar days	July 25 to August 15, 2011 22 calendar days	Completed on time
PRR-12-05 \$1,051,369.75	September 19 to November 2, 2012 45 calendar days	September 19 to October 24, 2012 36 calendar days	Completed on time
Saint-Laurent borough			
C12-036 \$3,503,621.14	Fall 2012 40 working days per phase, i.e., 120 working days for the 3 phases	September 5 to November 26, 2012 59 working days for the 3 phases	Completed on time
Rivière-des-Prairies–Pointe-aux-Trembles borough			
ING12-05 \$442,906.70	July 23 to September 30, 2012 70 calendar days	July 23 to September 14, 2012 54 calendar days	Completed on time
Service de l'eau – Direction de l'eau potable			
9953 (A-323-1) \$1,744,928.98	June 25 to December 21, 2010 155 calendar days	August 8 to December 5, 2011 120 calendar days Work completed within the contract timelines by the new contractor	Completed on time No penalty One year late because the first contractor declared bankruptcy
Service de l'eau – Direction de la gestion stratégique des réseaux d'eau			
9991 \$11,935,721.68	May 1 to November 30, 2011 214 calendar days	April 25 to November 17, 2011 206 calendar days	Completed on time
10033 East: \$13,062,136.26 West: \$11,818,424.01	April 23 to November 16, 2012 208 calendar days	April 18 to November 16, 2012 213 calendar days ^c	Completed on time
SITE			
1180 \$4,912,027.84	September 2011 to December 2012 270 calendar days	October 28 to December 16, 2011 May 14 to November 30, 2012 251 calendar days	Completed on time

^a The scheduled work start and completion dates were provided in the infrastructure contracts signed with the contractors. As for the timeframe, it is specified in the call for tender documents.

^b The actual work start and completion dates are established respectively from the order to start the work and the provisional acceptance of the work following a site inspection. The actual timeframe is determined from this information.

^c An order to start the work was issued on April 18, 2012.

3.2. Projects Not Completed Within the Initial Timeframe

Although completion timeframes were stipulated in the infrastructure work contracts signed with the contractors and approved by the manager, our analysis indicates that eight projects were not completed within the initial timeframe and that one project will be completed in

2013. To this effect, we obtained the necessary documentary evidence indicating whether or not penalties had been imposed under the contract.

3.2.1. Ville-Marie Borough

3.2.1.A. Background and Findings

Table 2 presents key information on the number of calendar days scheduled in the contract documents binding the contractor to the borough as well as the number of calendar days actually required to complete the work. To this effect, neither of the projects that we examined were completed within the initial timeframe and penalties were not imposed in both cases.

**Table 2 – Project Completion (Initially Planned and Actual)
Ville-Marie Borough**

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned	Actual	
VMP-11-016 \$1,038,247.88	October 25 to December 9, 2011 45 calendar days	October 18 to December 19, 2011 April 19 to May 18, 2012 93 calendar days	48 calendar days late Not completed on time No penalty
VMP-11-018 \$1,488,556.00	October 1 to December 16, 2011 70 calendar days	May 14 to July 26, 2012 August 6 to 13, 2012 82 calendar days	12 calendar days late Not completed on time No penalty

With respect to these two projects, we attempted—in vain—to obtain from the Direction des travaux publics the minutes of the administrative meetings that were held after the start-up meeting in order to evaluate if the work had progressed as planned and if the timeframes had been met as well as to consult the recommended documents in the general contract provisions (letters issued to interrupt and resume the work, changes authorized by the city).

According to the Direction des travaux publics, these difficulties in obtaining the documentary evidence are due to the fact that the work was supervised by a city employee who is currently on paternity leave. Furthermore, the engineer responsible for the project retired from the city in August 2012. We were surprised to learn that the contract documents supporting project completion and follow-up are not available in the project records.

Project VMP-11-016 – Reconstruction of a Sewer and a Secondary Water Conduit (\$1,038,247.88)

The tender form dated July 27, 2011 stipulates that the work must be completed within 45 calendar days after the manager has authorized the start of the work in writing.

On September 27, 2011, the city council authorized an expense of \$1,038,247.88 (including taxes as well as contingency and incidental fees) to complete this project.

The timeframe was initially set from October 25 to December 9, 2011. In accordance with clause 5.1.6 of the general contract provisions, the manager ordered the start of the work on October 18, 2011.

On October 13, 2011, the contractor proposed a work schedule over a two-year period, i.e.:

- In 2011: from October 18 to November 29 (43 calendar days);
- In 2012: from May 21 to June 6 (17 calendar days).

Under this schedule, the work would be completed in a total of 60 calendar days. Consequently, the timeframe proposed by the contractor did not comply with the required 45 calendar days under the contract. According to clause 5.1.5.2 of the general contract provisions, the contractor could not amend the work schedule without the manager's written authorization, specifically at the time of signing a modification instruction. However, we were unable to retrace any document authorizing the revised timeframe of 60 calendar days.

Our analysis of the daily worksite reports confirmed that the work had started on October 18, 2011 and was interrupted on December 19, 2011 for the winter season (63 calendar days). Thereafter, infrastructure work resumed on April 19, 2012 and was completed on May 18, 2012 (30 calendar days). A total of 93 calendar days were required to complete the infrastructure work, i.e., 48 days more than stipulated in the contract (45 calendar days).

Under clauses 5.1.8 ("Suspension of the work") and 5.1.6 ("Start of the work") of the general contract provisions, we were unable to retrace the order issued to interrupt the work on December 19, 2011 or the order issued on April 19, 2012 to resume the work.

By virtue of clause 5.1.10 of the general contract provisions, establishing the applicable penalties for failing to complete the work on time, the manager should have imposed the applicable penalties given that the work had not been completed within the initial timeframe. However, he did not deem it appropriate to impose the applicable penalties.

The head of the Division des études techniques explains the project completion delays in this case as follows:

- overtime hours were required to install a temporary aqueduct and the project was hindered by poor weather conditions;
- masses that were not indicated in the call for tenders were found under the sidewalk.

This project was completed within budget.

Here is the situation with respect to the aforementioned project (VMP-11-016):

- it was not completed within the contract's timeframe;
- the borough manager supervising the completion of the work did not deem it appropriate to impose the applicable penalties and we were unable to obtain a formal document motivating his decision;
- a certain number of formal documents provided under the general contract provisions (letters ordering the interruption and resumption of the work, changes ordered by the city) were not produced and are not included in the project's permanent records.

Project VMP-11-018 – Reconstruction of a Combined Sewer and a Secondary Water Conduit (\$1,488,556.00)

The tender form dated August 12, 2011 stipulates that the work must be completed within 70 calendar days after the manager has authorized the commencement of the work in writing.

On October 24, 2011, the city council authorized an expense of \$1,488,556.00 (including taxes as well as contingency and incidental fees) to complete this project.

The timeframe was initially set from October 1 to December 16, 2011. However, given that the awarding of the contract by the city council was delayed (the contract was finally awarded on October 24, 2011), the head of the borough's Division des études techniques pointed out to us that the work was postponed until 2012 because of the poor weather at that time of the year. However, we were unable to retrace any communication between the Ville-Marie borough and the contractor that officially postponed the work.

In accordance with clause 5.1.6 of the general contract provisions, the manager ordered the start of the work on May 14, 2012.

Despite the requirement for the contractor to file a work schedule before starting the work, we were unable to retrace any evidence to the effect that the contractor had prepared a

new work schedule. Consequently, we cannot validate the required timeframe of 70 calendar days provided in the contract. Furthermore, we were unable to obtain from the manager any evidence confirming that the contractor had provided a new schedule.

Our analysis of the daily worksite reports confirmed that the work started on May 14, 2012 and was interrupted on July 26, 2012 for the construction holiday (74 calendar days). Thereafter, work resumed on August 6, 2012 and was completed on August 13, 2012 (8 calendar days). Accordingly, a total of 82 calendar days were required to complete the infrastructure work, i.e., 12 days more than stipulated in the contract (70 calendar days).

The manager should have imposed the applicable penalties given that the work had not been completed within the initial timeframe. However, the head of the Division des études techniques explained that unscheduled work entrusted to the contractor required additional days to complete the project. The unscheduled work consisted of removing a larger quantity of contaminated soil than expected and carrying out additional deviation and hookup work.

The laboratory analysis report indicates that the work was completed on August 13, 2012. At the time we produced our audit report, provisional acceptance of the work had not yet been issued.

This project was completed within budget.

The VMP-11-018 project took longer than expected to complete after the borough had approved requests for changes.

3.2.1.B. Recommendation

We recommend that the Direction des travaux publics of the Ville-Marie borough instigate a documentation procedure and keep records of important information to support the decisions made and show compliance with the contract provisions.

Business unit's response:

[TRANSLATION] The Direction des travaux publics has already begun to restructure its procedures.

A work group is currently developing a project classification system that reflects project know-how and tracking at all stages.

Furthermore, a check list of important project items will be added to the new management procedure.

Project managers are responsible for the classification of their projects. However, management will now appoint a member of the project team to be in charge of the file (another person will be appointed as an alternate) to ensure that project documents are properly managed and classified.

A central classification system will be implemented to facilitate the archiving of all projects of the Division des études techniques. (Planned completion: July 2013)

3.2.1.C. Recommendation

We recommend that the Direction des travaux publics of the Ville-Marie borough, given the lack of documentary evidence supporting the completion and follow-up of these projects, take the necessary measures to ensure that:

- **the manager approves the infrastructure work completion schedule prepared by the contractor;**
 - **the manager approves the issuance of the order to interrupt the work as well as the order to start the work, when required;**
 - **the project manager imposes the applicable penalties when the work is not completed as initially planned or in accordance with contract provisions;**
- to ensure compliance with the administrative provisions and provide justification of the decisions made.**

Business unit's response:

[TRANSLATION] The following improvements will be made to the project management procedure used by the Direction des travaux publics of the Ville-Marie borough:

- *The borough's project manager will ask the contractor or service provider to prepare a comprehensive work schedule including a Gantt chart mapping out the project. On a monthly basis, the contractor will be required to provide the project manager with an updated schedule. These new requirements will be added to the Ville-Marie borough's specifications;*
- *Work start-up, interruption and provisional acceptance forms will be developed and provided to contractors or service providers to enable them to adequately document these project stages;*
- *A follow-up of the calendar will be done and recorded during each worksite meeting to ensure the project is completed as per the contract timelines. Should a delay be justified, the contractor will be required to request an extension. This request will be officially prepared by the project manager using a modification instruction or a calendar extension form. (Planned completion: July 2013)*

3.2.1.D. Recommendation

We also recommend that the Direction des travaux publics of the Ville-Marie borough:

- obtain documentary evidence concerning projects that were not completed within the initial timeframe and for which no penalty was imposed in order to validate the reasons for the project manager's proposal;
- periodically report to the borough director to inform him of the projects for which penalties were not imposed although they were subject to penalties.

Business unit's response:

[TRANSLATION] With the purpose of informing the borough director about late projects for which penalties were not imposed or for which penalties could be imposed, the Division des études techniques will provide the borough manager, three times a year, with a table—yet to be developed—as well as all existing project documents, including the decisions made and the reasons for these decisions. All of these documents will be approved by the division head. (Planned completion: July 2013)

3.2.2. Saint-Laurent Borough

3.2.2.A. Background and Findings

Table 3 presents key information on the number of calendar days scheduled in the contract documents binding the contractor to the borough and on the number of calendar days actually required to complete the work. One of the two projects we audited was not completed as initially planned but no penalty was imposed.

**Table 3 – Project Completion (Initially Planned and Actual)
Saint-Laurent Borough**

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned	Actual	
C11-042 \$3,157,579.49	September to December 2011 May to June 2012 58 working days	October 3 to November 29, 2011 April 10 to June 26, 2012 98 working days	40 working days late Not completed on time No penalty

Project C11-042 – Reconstruction of Water and Sewer Systems (\$3,157,579.49)

The tender form dated July 25, 2011 stipulates that the work must be completed within 58 working days—which includes 8 days to apply the second layer of asphalt in 2012—after the manager has authorized the start of the work in writing.

An expense of \$3,157,579.49 (including taxes and incidental fees) was authorized to complete this project by the Saint-Laurent borough council on August 2, 2011 and by the city council on September 27, 2011 (the project was financed by both authorities).

As indicated in the decision-making summary, the timeframe was initially set from September to December 2011 and from May to June 2012. However, given that the city council awarded the contract at the end of September, borough management agreed during the start-up meeting to have the contractor work fewer days in 2011 and more days in 2012. The work nevertheless had to be completed within 58 working days.

Our analysis of the tracking documents (purchase orders issued to the contractors, timelines filed on different dates, minutes of worksite meetings, partial provisional acceptance of the work completed) confirmed that work had started on October 3, 2011 and was interrupted on November 29, 2011 (42 working days). Thereafter, work resumed on April 10, 2012 and was completed on June 26, 2012 (56 calendar days). Consequently, a total of 98 calendar days were needed to complete the infrastructure work, i.e., 40 more than stipulated in the contract (58 contract working days).

The manager should have imposed the applicable penalties given that the work had not been completed within the initial timeframe. However, he did not deem it appropriate to do so for the following reasons supported by documentary evidence:

- the work started only in October. As a result, the work was carried out in winter conditions and the contractor was obliged to modify his work methods. The contractor had planned that two teams would work on the three streets concurrently. However, because of the winter conditions and the presence of gas lines on rue Cardinal, the Saint-Laurent borough decided to delay the work to avoid keeping only one street open during the winter, which would have inconvenienced citizens (delay of 27 days);
- the excavation of bedrock on a main road delayed the completion of the work by approximately nine days;
- it rained for four days during which no work could be completed on the site.

The work was completed on June 26, 2012. At the time we produced our audit report, the provisional acceptance of the work had not yet been issued.

This project was completed within budget.

3.2.2.B. Recommendation

We recommend that the Direction des travaux publics of the Saint-Laurent borough:

- obtain documentary evidence concerning projects that were not completed within the initial timeframe and for which no penalty was imposed in order to validate the reasons for the project manager's proposal;
- periodically report to the borough director to inform her of the projects for which penalties were not imposed although they were subject to penalties.

Business unit's response:

[TRANSLATION] Projects that were not completed on schedule are normally identified during worksite meetings, usually held every two weeks. All delays are documented and explained in the worksite report as are the suggested corrective action and penalties imposed. Controls are implemented to ensure that the public works manager is informed of the delay, reason for the delay, corrective action and penalty. (Completed, March 2013)

A quarterly report must be provided to the borough director to inform him of projects that are running late. (Planned completion: June 2013)

3.2.3. Rivière-des-Prairies–Pointe-aux-Trembles Borough

3.2.3.A. Background and Findings

Table 4 presents key information on the number of calendar days scheduled in the contract documents binding the contractor to the borough and on the number of calendar days actually required to complete the work. One of the two audited projects was not completed as initially planned but no penalty was imposed.

**Table 4 – Project Completion (Initially Planned and Actual)
Rivière-des-Prairies–Pointe-aux-Trembles Borough**

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned	Actual	
ING11-07 \$629,727.84	October 17 to November 30, 2011 45 calendar days	October 17 to December 9, 2011 54 calendar days	9 calendar days late Not completed on time No penalty

Project ING11-07 – Reconstruction of a Combined Sewer and a Secondary Water System (\$629,727.84)

The call for tenders stipulates that the work must be completed within 45 calendar days once the manager has ordered the start of the work.

On September 27, 2011, the city council authorized an expense of \$629,727.84 (including taxes and contingency fees) to complete this project.

The timeframe was initially set from October 17 to November 30, 2011. In accordance with clause 4.1.6 of the borough's general administrative provisions, the manager ordered the start of the work on October 17, 2011.

On October 6, 2011, the contractor provided a work schedule specifying that work would be completed from October 17 to December 2, 2011, for a total of 47 calendar days (the two additional days corresponding to Thursday and Friday).

Our analysis of the daily worksite reports confirmed that the work started on October 17, 2011 and was completed on December 9, 2011 (54 calendar days), i.e., nine days more than the contract stipulated (45 contract calendar days).

The project manager should have imposed the applicable penalties given that the work was not completed within the initial timeframe. However, he did not deem it appropriate to do so and specified that the initial project design had been modified to accommodate another related project. Furthermore, we counted a total of 20 requests for changes that were authorized. The provisional work acceptance certificate was issued on February 1, 2012.

This project was completed within budget.

3.2.3.B. Recommendation

We recommend that the Direction des travaux publics of the Rivière-des-Prairies–Pointe-aux-Trembles borough:

- obtain documentary evidence concerning projects that were not completed within the initial timeframe and for which no penalty was imposed in order to validate the reasons for the project manager’s proposal;
- periodically report to the borough director to inform him of the projects for which penalties were not imposed although they were subject to penalties.

Business unit’s response:

[TRANSLATION] Formalize the criteria used to determine whether or not the penalty clauses should be applied in the case of contracts that are not completed as initially planned:

- *have these criteria validated by Legal Services to ensure their compatibility with the legal management of contracts that are behind schedule;*
- *have these criteria approved by management (the Direction des travaux publics and the borough management). (Planned completion: June 2013)*

Implement a formal tracking and reporting process for contracts that are not completed as initially planned:

- *require the contractor to provide a comprehensive work schedule including all critical milestone dates. This schedule will be used in reference to the contract’s timelines and make it easier to track differences;*
- *formally document and quantify all delays as the contract is completed that could result in the work not being completed according to schedule;*
- *determine whether the city or the contractor is responsible for the delays and explain why;*
- *formally notify the contractor during the completion of the contract of the delays for which he is deemed responsible and inform him that these delays could cause the city to impose penalties as provided under the contract;*
- *following a joint analysis by the project manager and manager, render a decision on whether or not to impose penalties in accordance with the criteria approved by management. The project manager motivates the decision, which must then be approved by the manager for each contract behind schedule for which no penalty was imposed;*
- *provide the public works manager and the borough director with a summary of all contracts behind schedule and for which the penalty clauses were not applied as well as related documentary evidence. This summary will be provided on a quarterly basis. (Planned completion: September 2013)*

3.2.4. Service de l'eau

3.2.4.1. Direction de l'eau potable

3.2.4.1.A. Background and Findings

Table 5 presents key information on the number of calendar days scheduled in the contract documents binding the contractor to the city and on the number of calendar days actually required to complete the work. Two of the three audited projects were not completed as initially planned and a penalty was imposed in the case of one project.

**Table 5 – Project Completion (Initially Planned and Actual)
Direction de l'eau potable**

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned	Actual	
9925 (A-327-3) \$5,286,906.98	October 29, 2009 to November 19, 2010 240 calendar days	May 3 to December 13, 2010 July 4 to September 14, 2011 298 calendar days	58 calendar days late Not completed on time No penalty
9954 (A-329) \$2,062,966.99	August 12 to November 20, 2010 100 calendar days	October 25, 2010 to March 25, 2011 127 calendar days	27 calendar days late Not completed on time Penalty imposed

Project 9925 (A-327-3) – Construction of Main and Secondary Water Conduits and Various Work on 600-mm Conduits (\$5,286,906.98)

The tender form dated August 3, 2009 stipulates that the work must be completed within 240 calendar days after the manager has authorized the start of the work in writing.

On September 21, 2009, the city council authorized an expense of \$5,286,908.98 (including taxes) to complete this project.

The schedule included in the decision-making summary indicates that the work would be completed over a two-year period (from 2009 to 2010) and that work would be interrupted during the winter season. The initial project schedule, once approved, covered the period between October 20, 2009 and November 19, 2010, for a total of 240 calendar days. The work was subdivided into five phases.

The contractor was informed in writing that the start of the work had been ordered for May 3, 2010. The letter also reiterated that 240 calendar days were scheduled to complete the work (from May 3, 2010 to December 29, 2010).

The minutes of the project start-up administrative meetings which were held on March 25, 2010 and April 21, 2010 indicate that the city and the contractor reached an agreement on a schedule and the date of May 3, 2010 for the start of the work.

The contractor carried out the work in accordance with the city's requirements and the five phases stipulated in the specifications, i.e.:

- **Completion of phases 1 to 4 in 2010:** Work started on May 3, 2010 and was completed on December 13, 2010, for a total of 225 calendar days;
- **Completion of phase 5 in 2011:** Work resumed on July 4, 2011 and was completed on September 14, 2011, for a total of 73 calendar days.

The contractor required a total of 298 calendar days to complete the project, i.e., 58 calendar days more than the initial contract schedule provided in the specifications (240 calendar days).

On July 8, 2011, the contractor requested an extension of the contract delay to complete additional work. The Direction de l'eau potable indicated to us that this extension resulted in additional work days which had not been scheduled in the initial contract, because of the following situations:

- Blocks of concrete belonging to Bell and the Commission des services électriques de Montréal (CSEM) were discovered near the site planned for a new valve house. Consequently, the planned site was modified and moved down the road to enable the construction of the valve house. This modification also resulted in changes being made to the valve house's water outlet lines;
- Shop drawings needed to be drafted and water line parts needed to be fabricated;
- A new request for authorization was filed with the Ministère de la Culture, des Communications et de la Condition féminine to modify the electrical panels in accordance with the CSEM regulations, initially unknown.

The Direction de l'eau potable admits the overruns but also confirms that they are in no way imputable to the contractor. Moreover, no penalty was imposed.

Provisional acceptance was issued on November 2, 2011, and this project was completed within budget.

Project 9954 (A-329) – Construction of a Main Water Conduit (\$2,062,966.99)

The tender form dated April 21, 2010 stipulates that the work must be completed within 100 calendar days after the manager has authorized the start of the work.

On June 14, 2010, the city council authorized an expense of \$2,062,966.99 (including taxes and incidental fees) to complete this project.

The schedule included in the decision-making summary indicates that the work was to be completed between August 12 and November 20, 2010. However, prior approval of the Ministère du Développement durable, de l'Environnement et des Parcs was required before work could start and the Direction de l'eau potable needed to obtain this approval by September 1, 2010. Consequently, the manager's order to start work was delayed.

During the start-up meeting held on September 9, 2010, the contractor presented a preliminary work schedule based on a work start date of September 20, 2010 and a work completion date of December 16, 2010. These dates implied that the work could be completed within 88 days whereas the contract stipulated a timeframe of 100 calendar days. The contractor was later notified by letter that the start of the work had been set for October 25, 2010.

The work started on October 25, 2010 and was interrupted for 24 days during the holiday period. The contractor revised the schedule several times and filed requests for additional work up to the completion of the work, on March 25, 2011. Under the circumstances, the work was completed 27 calendar days late.

The city agreed that 18 of these 27 calendar days were imputable to the requests for additional work that it had approved and that the remaining nine days were imputable to the contractor. These nine days should have resulted in a penalty being levied against the contractor for delays in completing the work. However, no penalty was imposed seeing as the contractor did not bill for the additional work.

On September 26, 2011, the city issued the provisional acceptance of the work, completed since March 25, 2011.

This project was completed within budget.

3.2.4.1.B. Recommendation

We recommend that the head of the Division des projets majeurs of the Direction de l'eau potable:

- obtain documentary evidence concerning projects that were not completed within the initial timeframe and for which no penalty was imposed in order to validate the reasons for the project manager's proposal;
- periodically report to the manager of the Direction de l'eau potable to inform him of the projects for which penalties were not imposed although they were subject to penalties.

Business unit's response:

[TRANSLATION] Implement an instruction requiring project managers to have all orientations concerning project contract schedule overruns approved. (Planned completion: May 2013)

Include, in a monthly report, the actual number of days required to complete the work in comparison to the duration of each contract as well as documentary evidence of the differences. (Planned completion: June 2013)

3.2.4.2. Direction de la gestion stratégique des réseaux d'eau

3.2.4.2.A. Background and Findings

Table 6 presents key information on the number of calendar days scheduled in the contract documents binding the contractor to the city and on the number of calendar days actually required to complete the work. One of the three audited projects was not completed as initially scheduled, but no penalty was imposed.

**Table 6 – Project Completion (Initially Planned and Actual)
Direction de la gestion stratégique des réseaux d'eau**

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned	Actual	
9979 \$12,049,926.67	April 1 to November 30, 2011 244 calendar days	April 18 to December 9, 2011 January 30 to February 21, 2012 259 calendar days	15 calendar days Not completed on time No penalty

Project 9979 – Installation of Linings to Rehabilitate Sewers on Various Streets of the Ville de Montréal (\$12,049,926.67)

According to the information contained in the call for tender documents, the initial project completion schedule covered the period between April 1 and November 30, 2011. However, the city reserved the right to delay a portion of the work at its discretion at no additional cost. The project's timeframe was not provided in terms of calendar days, so we therefore deducted that the work had to be completed within 244 calendar days.

On March 21, 2011, the city council authorized an expense of \$12,049,926.67 (including taxes and incidental fees) to complete this project.

In accordance with clause 5.1.6 of the general administrative provisions, the contractor was notified by letter that the work was to start on April 18, 2011. This letter reiterated that, in accordance with clause 3.0 of the supplementary administrative provisions, the work was to be completed by November 30, 2011 at the latest.

During the September 16, 2011 administrative meeting, the Direction de la gestion stratégique des réseaux d'eau expressed concern about the completion of all of the streets planned under the contract by November 30, 2011. On October 26, 2011, the senior manager of the Service de l'eau authorized the contractor to continue the work until December 16, 2011.

On January 23, 2012, the senior manager of the Service de l'eau authorized the contractor to continue the work from January 30 to March 30, 2012. The work was completed on February 21. However, a part of the work was cancelled because work other than lining sewers was being completed by other contractors at the same time and on the same street (e.g., sidewalks).

On October 31, 2012, the city issued the provisional acceptance of the work.

Under the contract, the work was to be completed within about 244 calendar days. However, the work actually took 259 days (15 days more than scheduled) to complete. The Direction de la gestion stratégique des réseaux d'eau approved an extension of the work period to make up for the delay. No penalty was imposed seeing as the additional work completed by the contractor had been approved by the city. This decision is supported by documentary evidence.

The project was completed within budget.

3.2.4.2.B. Recommendation

We recommend that the Division de la gestion stratégique des réseaux d'eau – Unité Nord of the Direction de la gestion stratégique des réseaux d'eau:

- obtain documentary evidence concerning projects that were not completed within the initial timeframe and for which no penalty was imposed in order to validate the reasons for the project manager's proposal;
- periodically report to the manager of the Direction de la gestion stratégique des réseaux d'eau to inform her of the projects for which penalties were not imposed although they were subject to penalties.

Business unit's response:

[TRANSLATION] The Direction de la gestion stratégique des réseaux d'eau will make sure it obtains documentary evidence concerning the projects that were not completed on time and the head of the Division de la gestion stratégique des réseaux d'eau – Unité Nord will periodically report to the manager of the Direction de la gestion stratégique des réseaux d'eau to inform her of projects for which penalties were not imposed although they were subject to penalties. (Completed, April 2013)

3.2.5. Service des infrastructures, du transport et de l'environnement

3.2.5.A. Background and Findings

Table 7 presents key information on the number of calendar days scheduled in the contract documents binding the contractor to the city and on the number of calendar days actually required to complete the work. One of the three audited projects was not completed as initially scheduled and a penalty may be levied against the contractor depending on the outcome of the investigation currently under way. One project is under way and will be completed in 2013.

**Table 7 – Project Completion (Initially Planned and Actual)
SITE**

Project no. Contract award	Start and end dates Timeframe		Comments
	Initially planned	Actual	
1109 \$2,472,000.49	March 9, 2011 to March 9, 2012 90 calendar days	October 11 to December 17, 2011 April 30 to October 1, 2012 223 calendar days	133 calendar days late Not Completed on time Possible penalty
162301 \$1,198,325.60	September to November 2012 90 calendar days	September 10 to October 7, 2012 28 calendar days in 2012 Work resumed in the spring of 2013	On schedule to date Work will be completed in 2013

Project 1109 – Reconstruction of a Combined Sewer and a Secondary Water Conduit (\$2,472,000.49)

The tender form stipulates that the work must be completed within 90 calendar days after the manager has authorized the start of the work. It provides that the work may begin in the spring of 2011.

On April 14, 2011, the city council authorized an expense of \$2,472,000.49 (including taxes and incidental fees) to complete this project.

The schedule included in the decision-making summary indicates that the work was to be completed in 2011. However, the decision-making summary also includes an initial project completion schedule covering the period between March 9, 2011 and March 9, 2012.

A start-up meeting was held on October 3, 2011. During this meeting, the contractor was reminded of the work completion timeframe of 90 consecutive calendar days.

The contractor was sent a letter notifying him that the work was scheduled to start on October 11, 2011.

An order interrupting the work was issued on December 17, 2011 during a worksite meeting. However, the contractor was required to return to the worksite during the winter to repair temporary paving that had been applied in poor weather conditions beyond his control.

The work to reconstruct the sewer and drinking water conduits resumed on April 30, 2012 following a communication from the engineer responsible for the project. The work continued through the summer and was completed on October 1, 2012.

The SITE issued the provisional acceptance of the work on October 1, 2012.

The work was completed in 223 calendar days, i.e., 133 days more than the 90 calendar days initially planned. The head of the Division de réalisation des travaux informed us that the case is currently being investigated and that the contractor was asked to explain the delays in completing the work.

This project was completed within budget.

Project 162301 – Reconstruction of Sidewalks on Various Streets of the Ville de Montréal (\$1,198,325.60)

The tender form stipulates that the work must be completed within 90 calendar days during the fall of 2012. However, the contractor is informed that the work could be completed in part or in whole in the spring of 2013.

On August 21, 2012, the city council authorized an expense of \$1,198,325.60 (including taxes and incidental fees) to complete this project.

The initial project schedule set out that the work would be completed from September to November 2012. The management of the SITE ordered the start of the work on September 10, 2012.

The minutes of the August 29, 2012 start-up meeting indicate that the Division de la réalisation des travaux reminded the contractor that he had a maximum of 60 calendar days to complete all of the work. Accordingly, all of the work had to be completed by November 9, 2012 at the latest.

A difference of 30 calendar days was noted between the timeframe provided in the tender form (90 days) binding the contractor to the city and the minutes of the August 29, 2012 project start-up meeting. Management informed us that it was unable to explain this difference.

Management of the SITE ordered the contractor to interrupt the work on October 7, 2012 because of the weather conditions that made it impossible reconstruct the sidewalks. The work will be completed in 2013. We have noted that one of the planned project phases has not yet started.

3.2.5.B. Recommendation

We recommend that the Division de la réalisation des travaux of the Direction des infrastructures:

- obtain documentary evidence concerning projects that were not completed within the initial timeframe and for which no penalty was imposed in order to validate the reasons for the project manager's proposal;
- periodically report to the manager of the Direction des infrastructures to inform her of the projects for which penalties were not imposed although they were subject to penalties.

Business unit's response:

[TRANSLATION] In cases where additional delays are granted to contractors, the documentary evidence is systematically attached to the final count in the work completion form that summarizes the actual timeline. (Completed, March 2013)

Have work completion approved by the manager of the Direction des infrastructures in the case of contracts for which penalties were not imposed although they were subject to penalties. (Planned completion: May 2013)

4. Appendix

4.1. List of the 17 Projects Covered by Our Audit

Table A – Scope and Value of the Audited Contracts

Project no.	Scope of work	Contract value
Ville-Marie borough		
VMP-11-016	Reconstruction of a sewer and a secondary water conduit	\$1,038,247.88
VMP-11-018	Reconstruction of a combined sewer and a secondary water conduit	\$1,488,556.00
Villeray–Saint-Michel–Parc-Extension borough		
PRR-11-03	Reconstruction of sidewalks along with geometric revision work at various locations in the borough	\$671,823.45
PRR-12-05	Leveling and paving of the roadway and reconstruction of sidewalks and borders	\$1,051,369.75
Saint-Laurent borough		
C11-042	Reconstruction of water and sewer systems	\$3,157,579.49
C12-036	Pavement rehabilitation work – 2012 program	\$3,503,621.14
Rivière-des-Prairies–Pointe-aux-Trembles borough		
ING11-07	Reconstruction of a combined sewer and a secondary water system	\$629,727.84
ING12-05	Reconstruction of a combined sewer, drinking water conduits, paving and sidewalks	\$442,906.70
Service de l'eau – Direction de l'eau potable		
9925 (A-327-3)	Construction of main and secondary water conduits and various work on 600-mm conduits	\$5,286,906.98
9953 (A-323-1)	Installation of a structural lining to rehabilitate the 500-mm gray cast iron conduit and construction of a 200-mm secondary water conduit	\$1,744,928.98
9954 (A-329)	Construction of a main water conduit	\$2,062,966.99
Service de l'eau – Direction de la gestion stratégique des réseaux d'eau		
9991	Installation of linings to rehabilitate secondary drinking water conduits on various streets of the Ville de Montréal	\$11,935,721.68
10033	Installation of linings to rehabilitate drinking water conduits on various streets of the Ville de Montréal (East and West sectors)	East: \$13,062,136.26 West: \$11,818,424.01
9979	Installation of linings to rehabilitate sewers on various streets of the Ville de Montréal	\$12,049,926.67
SITE		
1109	Reconstruction of a combined sewer and a secondary water conduit	\$2,472,000.49
1180	Construction and reconstruction of a combined sewer, a secondary water conduit, flexible pavement and sidewalks and development of a cycling path	\$4,912,027.84
162301	Reconstruction of sidewalks, where necessary, on various streets of the Ville de Montréal	\$1,198,325.60