

TORONTO STAFF REPORT

July 28, 2006

To: Audit Committee

From: Auditor General

Subject: Management of Construction Contracts –
Reconstruction of Queensway Eastbound Lanes

Purpose:

This report presents the results of the Auditor General's review of the Management of Construction Contracts - Reconstruction of Queensway Eastbound Lanes. This review was conducted as part of the Auditor General's 2006 Annual Work Plan.

Financial Implications and Impact Statement:

The implementation of recommendations in this report will strengthen controls and improve management of the City's construction contracts and has the potential to generate recoveries of approximately \$50,000 on account of overpayments made to the contractor.

Recommendations:

It is recommended that:

(1) the following recommendations in the attached Auditor General's report entitled "Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes" be adopted:

“1. The Executive Director, Technical Services Division, develop policies to ensure that:

- (a) Construction Inspector's Daily Reports are adequately completed providing all relevant details such as calculations, measurements and work location references supporting payment;
- (b) documentation supporting progress payments are diligently reviewed in detail by supervisory staff; and

- (c) all such policies and procedures are communicated to the appropriate staff.
2. The Executive Director, Technical Services Division, take steps to determine and recover over payments made to the contractor identified as part of this review.
 3. The Capital Works Projects, Procurement and Administration Procedures Manual be revised to include details relating to the work requested by third parties during the course of City contracts. The manual should address:
 - the specific circumstances when third-party work should be undertaken;
 - the requirement for written agreements for all third-party work conducted; and
 - policies and procedures relating to the billing and recovery of agreed upon costs.
 4. The Executive Director, Technical Services Division, ensure that all contracts contain provisions relating to any excess equipment or supplies purchased. While there may be certain circumstances where it is not possible to determine the exact amount of equipment or supplies required, there should be specific provisions in each contract to determine how such matters are dealt with.
 5. The Executive Director, Technical Services Division, review the possibility of recovering the \$2,000 “administrative premium” charged by the contractor in connection with supplies purchased from the contractor by the City.
 6. The Executive Director, Technical Services Division, develop appropriate controls and processes to ensure that:
 - (a) inspection reports prepared by third-party consultants are reviewed and adequately monitored;
 - (b) follow-up actions on work failing agreed upon standards are taken and documented;
 - (c) reworks are validated and actions not yet taken on failed tests are completed prior to the final payment on the project; and
 - (d) information relating to tests performed by consultants are maintained.

7. The Executive Director, Technical Services Division, ensure that policies and procedures for issuing extra work orders through change directives be complied with and separate documentation is used for recording work pertaining to extra work orders.
8. The Executive Director, Technical Services Division, review the payment made to the contractor for detour services for the period in excess of the original contract and, if appropriate, recover the overpayments. Future charges similar in nature be adequately reviewed prior to payment.
9. The Executive Director, Technical Services Division, ensure that policies and procedures are followed to address and document project delays and, where applicable, liquidated damages are recovered on a timely basis.
10. The Executive Director, Technical Services Division, ensure that:
 - (a) extra work is approved in accordance with authorized spending limits and splitting work orders for the same project be discontinued; and
 - (b) payment for extra work is reviewed for calculations, errors and omissions, and adequacy of supporting documentation.
11. The Executive Director, Technical Services Division, take steps to determine and recover the overpayments made to the contractor in relation to the extra work orders relating to this particular contract.
12. The Executive Director, Technical Services Division, ensure that any cost adjustments made for the substitution of materials contracted for are adequately reviewed for material quality, accuracy and reasonableness before approval.
13. The Executive Director, Technical Services Division, ensure that wherever possible all required work is included in the original contract to limit extra work orders where a premium is paid.
14. The Executive Director, Technical Services Division, update the procedures manual to include procedures for verifying the thickness of asphalt, concrete and granular material before the release of payment.
15. The Executive Director, Technical Services Division, develop procedures to ensure details of all charges, including labour rates payroll overhead costs, are agreed upon and form part of the original contract documents.
16. The Executive Director, Technical Services Division, take steps to ensure compliance with policies and procedures in relation to:

- documenting the daily work completed in the Field Inspector's Daily Work Report;
- documentation of monthly field meetings;
- preparation of the Deficiency List and List of Incomplete Items on achieving substantial completion;
- confirmation of final inspection before release of final payment; and
- obtaining statutory declaration and WSIB clearance as required by the procedures manual."

(2) the City Manager be requested to report to the Audit Committee by June 30, 2007 on the implementation of the recommendations in the Auditor General's report entitled "Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes".

Background:

The review of the Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes was conducted as part of the Auditor General's 2006 Annual Work Plan.

This review covered the following areas:

- An Evaluation of Internal Controls on Contract Progress and Final Payments;
- An Evaluation of Controls Relating to the Processing and Payment of Extra Work Orders;
- A Review of Contract Tender Documents; and
- An Evaluation of Compliance with Policies and Procedures in Managing Construction Projects.

This review was conducted in accordance with generally accepted government auditing standards.

Comments:

The attached Auditor General's report entitled "Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes" contains 16 recommendations. Management's response to each of the recommendations contained in this report is attached as Appendix 2.

Conclusions:

The objective of this review was to assess whether the City has appropriate and effective controls over the management of construction contracts. Our review focused on contract administration, processing of payments and compliance with relevant policies, procedures and contract terms and conditions.

Our review identified a number of areas requiring strengthened management controls and improved project management processes. This review also identified a number of opportunities and specific instances for recovery of excess payments which we estimate to be in the range of \$50,000. Certain of the issues identified in this report are currently being addressed by management including the recovery of excess payment made to the contractor.

Addressing the recommendations in this report will provide for more effective management of City resources, and enhance the overall effectiveness of contract management and payment processes.

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List of Attachments:

Appendix 1: Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes

Appendix 2: Management Response to the Auditor General’s Review of Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes

Management of Construction Contracts
Reconstruction of Queensway Eastbound Lanes

July 28, 2006

Management of Construction Contracts
Reconstruction of Queensway Eastbound Lanes

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July 28, 2006

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BACKGROUND AND AUDIT REPORT IN BRIEF

To maintain the City's infrastructure of roads and bridges, the City through its Technical Services Division undertakes construction, reconstruction and rehabilitation of roads and bridges. The vast majority of these contracts are tendered to external contractors through a competitive tender process. The City also engages independent consultants and engineers, again through a competitive tender process, in managing and testing the quality of work performed by contractors.

Over the past 12 months or so, concerns have been raised by third parties in connection with the way the City manages certain of its major construction/maintenance contracts. The issues raised were reviewed with the third-party complainants by the Auditor General and certain concerns were identified. As a result of these concerns, an audit report was issued in December 2005 entitled "Contract Management Issues." This particular report was limited in its scope and essentially addressed the concerns raised by the third parties. This report made three recommendations as follows:

"1. the Deputy City Manager ensure that:

- (a) all specifications contained in construction contracts are clear, concise and enforceable. In circumstances where certain specifications are considered too rigid and likely unenforceable, such specifications be reviewed and where appropriate, amended;
- (b) minimum standards for material testing on all construction contracts are developed, documented, approved and monitored;
- (c) all contract specifications are appropriately communicated to Contract Administrators, including Senior Engineers, Engineers and Inspectors. In unusual circumstances, where there is a need to deviate from contract specifications, reasons for such deviations be documented and approved;

- (d) recommendations contained in the March 2001 report entitled, “Contract Management Procedures – Transportation Services Division, Works and Engineering Services Department” are reviewed and implemented;
 - (e) decisions in regard to asset preservation issues should be documented; and
 - (f) current policies concerning the rotation of Inspectors throughout the City’s districts be evaluated. Such evaluations take into account the need to rotate Inspectors amongst the City’s Contractors; and
- (2) the Deputy City Manager ensure that:
- (a) all tender calls are appropriately planned and managed in order to ensure that any tender call cancellations are minimized;
 - (b) all tender calls be appropriately planned in order to ensure that the tendered work can be completed during the construction period time frame;
 - (c) policies relating to “vendor complaint resolution” be re-evaluated in order to ensure that delays to the contract approval process are minimized;
 - (d) the determination of what constitutes a “material written objection” relating to contract awards be evaluated in consultation with City Legal; and
 - (e) decisions relating to cancelled contract awards be in writing and approved by Senior Management; and
- (3) the Deputy City Manager ensure that the issues identified in this report are included in the Capital Works Projects, Procurement and Administration Manual. In addition, the development of a detailed procedural checklist for inclusion in the manual should be considered.”

In view of the issues identified in our report titled “Contract Compliance Issues,” it was determined that our 2006 Audit Work Plan should include a more detailed review of specific contracts. In addition, the Auditor General’s Office has received a number of calls on its Fraud and Waste Hotline relating to the management of City contracts. The concerns have been addressed on an individual basis and communicated to management. It is the intent that ongoing reviews of specific individual contracts be a part of our future audit work plans.

This current report specifically focuses on one particular project. Concerns similar to the ones contained in the previous report were identified in this review.

The contract relating to the “Queensway Reconstruction - Eastbound Lanes” was selected for review in 2006 generally because it represented the types of contract and work currently being conducted in the City. This particular work related to the reconstruction of the eastbound lanes of the Queensway from the Humber River to Claude Avenue, including improved landscaping, bicycle lanes, new street lighting, updated traffic signals and new enlarged streetcar platforms.

The contract was awarded to Ferma Road Construction Limited in the amount of \$4,678,730.

This report contains a number of recommendations which, in our view and in concert with the recommendations contained in previous reports, will improve operational effectiveness, controls over contract management processes and contract payment procedures. Even though the recommendations relate to one contract, they unquestionably have relevance to all other contracts managed by the City.

The Division has made progress in the way it manages its major construction projects. The development of a comprehensive “Capital Works Projects, Procurement and Administration Procedures Manual” has been an important step in standardizing policies and procedures and is a critical document for those staff involved in contract management. The key objective for management is to ensure that the policies and procedures outlined in this manual are in fact being followed, as well as the development of a quality assurance process to verify that the policies and procedures are being followed. There is little benefit in devoting significant resources to the

development of such an important document if there is little commitment at the staff level to comply with its contents.

While improvements have been made in the way the City manages its major construction contracts, our review did identify a wide range of issues which need to be addressed. These issues indicate that further enhancements to management controls and processes are required. The issues identified are outlined in detail in the balance of this report and include the following:

- The process relating to payments to contractors requires review and evaluation. Specifically, certain payments are being made without adequate review, as well as without an appropriate level of supporting documentation and, in a number of cases, billing errors have resulted in overpayments. These overpayments should be recovered from the contractor.
- Controls over recovery of costs incurred on behalf of third parties need to be improved. All work carried out on behalf of third parties should have prior written agreement and costs incurred should be recovered on a timely basis.
- There is a lack of documentation in relation to failed concrete and compaction testing. While work may have been undertaken to correct the deficiencies, there is no evidence that any rework and retesting has taken place.
- Controls over the issue of extra work orders need to be reviewed and improved. Supporting calculations for extra work orders were often lacking and splitting of extra work orders resulted in non-compliance with financial signing authority limits. Opportunities exist to reduce charges relating to additional work orders.
- We noted instances where written procedures in relation to contract management were not complied with.

Other issues directly related to each of the above concerns have also been identified and specific recommendations have been made to address each of the audit findings. This report contains 16 recommendations. In many cases, the recommendations are elementary. While policies and procedures currently exist to address many of the recommendations, these policies are not being followed. The challenge facing management is to ensure that updated policies and procedures are communicated so that staff are aware of the importance of complying with these policies and procedures. In addition, it is important to emphasize that prior long-standing practices in the management of contracts should be discontinued.

AUDIT OBJECTIVES, METHODOLOGY AND SCOPE

What were the Objectives of this Audit?

The objectives of our review were to determine whether:

- (a) Expenditures made to contractors were reasonable, accurate, properly authorized and were for actual services rendered and work performed;
- (b) Contractors complied with contract provisions and specifications; and
- (c) Procedures were in place to adequately monitor the construction process.

How Did We Conduct this Audit?

Our audit methodology included the following:

- review of the actual contract (contract 05WD-01RD);
- review of relevant policies and procedures and current divisional practices;
- review of City Council and Audit Committee reports;
- interviews with appropriate members of City staff;
- evaluation of management controls and practices;

- site visits and physical verification of project components; and
- other procedures deemed appropriate.

We also have had discussions with audit staff from the City's Internal Audit Division in relation to this review and, in particular, we have received assistance from a staff member from the Toronto Transit Commission whose work is exclusively related to the audit of large-scale construction contracts.

What Did the Audit Include?

This review was focused exclusively on the contract for the reconstruction of Queensway Eastbound Lanes and covered the period from the inception of the project, July 2005, to the most recent progress payment as at June 30, 2006. The audit was conducted in accordance with generally accepted government auditing standards and included a review of the following areas:

- An Evaluation of Internal Controls on Contract Progress and Final Payments;
- An Evaluation of Controls relating to the Processing and Payment of Extra Work Orders;
- A Review of Contract Tender Documents; and
- An Evaluation of Compliance with Policies and Procedures in Managing Construction Projects.

The audit did not include a review of the tender process in relation to the award of this particular contract.

AUDIT RESULTS – WHAT DID WE FIND?

A. PROGRESS PAYMENTS MADE TO THE CONTRACTOR

Background

As of June 30, 2006, a total of eight progress payments were processed and paid in the amount of \$3,808,946. The processing of the final payment on this contract is in progress. Progress payments are compiled based on inspectors daily work reports and approved by a manager in the Technical Services Division. Inspectors daily work reports are the source documents supporting payments to contractors and, as a result, are critical documents in ensuring progress payments are accurate and complete.

A.1. The Process Relating to Progress Payments Made to Contractors Requires Improvement

Inspectors daily work inspection reports are the documents used to record, measure and validate work completed by the contractor. These reports are required to provide an adequate level of details of the work completed, supported by appropriate calculations, measurements and other information in order to support each progress payment to a contractor.

Our review identified over \$200,000 out of a total \$2 million in expenditures sampled for the audit review, which did not contain the required level of information to support payment to the contractor. While this work was likely completed, we were not able to verify the validity of the payment.

Finally, in our review of documentation supporting payments to the contractor, we identified approximately \$25,000 in overpayments due to various errors in the determination of progress payments.

Recommendations:

- 1. The Executive Director, Technical Services Division, develop policies to ensure that:**
 - (a) Construction Inspector's Daily Reports are adequately completed providing all relevant details such as calculations, measurements and work location references supporting payment;**
 - (b) documentation supporting progress payments are diligently reviewed in detail by supervisory staff; and**
 - (c) all such policies and procedures are communicated to the appropriate staff.**

- 2. The Executive Director, Technical Services Division, take steps to determine and recover over payments made to the contractor identified as part of this review.**

A.2. The Recovery of Costs Incurred on Behalf of Third Parties Requires Review

It is common practice during the construction of roads and highways for commercial or residential development work to be already underway at the inception of a project by the developer or other entities such as Toronto Hydro. Under these circumstances, developers or other entities often request the contractor, in consultation with senior City staff, to undertake additional work related to the road construction project rather than engaging in another contractor. Additional work may include sidewalks or side roads, or certain other electrical work. The additional work done in these circumstances is paid for by the City and reimbursed by the third parties based on billings submitted by the City.

The Capital Works Projects, Procurement and Administration Manual does not contain any specific guideline in relation to work conducted by contractors for third parties.

We noted that costs incurred by the City in relation to work completed for third parties is not billed and recovered on a timely basis. In this particular contract, amounts are due from the developer and Toronto Hydro amounting to \$184,422 and \$17,550 respectively. At the time of our review, these amounts had not been billed and, in the case of Toronto Hydro, staff were not aware of the amount recoverable.

In addition, in this particular contract, a formal agreement does not exist between the City, the developer and Toronto Hydro specifying the exact details of work to be completed and the respective payments to be charged.

Recommendation:

3. The Capital Works Projects, Procurement and Administration Procedures Manual be revised to include details relating to the work requested by third parties during the course of City contracts. The manual should address:

- **the specific circumstances when third-party work should be undertaken;**
- **the requirement for written agreements for all third-party work conducted;**
and
- **policies and procedures relating to the billing and recovery of agreed upon costs.**

A.3. The Purchase of Excess Material Not Required By the Contract

Our review identified in this particular contract a situation where certain electrical supplies were purchased by the contractor in excess of those required under the contract. These items were subsequently purchased by the City from the contractor. The excess items had a value of approximately \$21,000 and included the contractor's "administrative premium" or markup of \$2,000. According to management, the basis for purchasing these items from the contractor was

due to the fact that they could be used on another contract or could be resold to Toronto Hydro. Our review of the other contract in which these parts were intended to be used indicated that this was not the case.

There was no basis for purchasing the excess equipment from the contractor. In particular, the payment of an “administrative premium” was unwarranted and should not have been paid.

Recommendations:

- 4. The Executive Director, Technical Services Division, ensure that all contracts contain provisions relating to any excess equipment or supplies purchased. While there may be certain circumstances where it is not possible to determine the exact amount of equipment or supplies required, there should be specific provisions in each contract to determine how such matters are dealt with.**

- 5. The Executive Director, Technical Services Division, review the possibility of recovering the \$2,000 “administrative premium” charged by the contractor in connection with supplies purchased from the contractor by the City.**

A.4. Documentation in Support of Material Testing is Lacking

Third-party consultants are used by the City to ensure that certain specifications contained in the contract are complied with. Based on our review, we have determined that adequate controls are not in place for follow up on work failing to meet specified testing criteria. For example, consultants conducted two tests to determine the strength of concrete work completed under the contract. In both cases, these tests concluded that the work conducted was not in compliance with agreed upon specifications. Similarly, we noted the consultant conducted “compaction tests” for asphalt laid as part of the contract and certain results were below the minimum specified compaction percentage. The consultant conducting the test described various weaknesses in the work carried out by the contractor, including lack of proper coating, an improper mix and contractor use of a substandard roller.

We were advised by management that actions were taken to address some of the failed tests. Documented evidence such as details of rework, additional work and the appropriate level of retesting of this phase of the work were not available. Consequently, we are not able to determine whether or not the original deficiencies were corrected.

In addition, management does not maintain information documenting when and how various concrete, material and compaction tests were carried out by the consultant.

Recommendation:

6. The Executive Director, Technical Services Division, develop appropriate controls and processes to ensure that:

- (a) inspection reports prepared by third-party consultants are reviewed and adequately monitored;**
- (b) follow-up actions on work failing agreed upon standards are taken and documented;**
- (c) reworks are validated and actions not yet taken on failed tests are completed prior to the final payment on the project; and**
- (d) information relating to tests performed by consultants are maintained.**

B. CONTROLS ON THE PROCESSING AND PAYMENT OF EXTRA WORK ORDERS

Background

Extra work orders are issued when incidental or additional work not covered by the original contract is required. In the case of this particular contract, a total of 86 additional work orders

amounting to \$566,819 were issued for extra or non-planned work on this project. The work, which is the subject of the extra work orders, is not tendered and is awarded to the existing contractor. The issuing of the significant amount of extra work orders has the potential to compromise the tender process and reflects inadequate pre construction design planning.

B.1. Controls on Extra Work Order Processing and Documentation Requires Improvement

Contract terms and conditions require that all amendments, extra or additional work be awarded to the contractor through change directives. Change directives were not issued for any of the extra work carried out by the contractor on this particular project. The lack of change directives may result in disputes if the work performed does not conform to stated requirements.

Currently, work relating to extra work orders is recorded in the same construction inspector's daily report where the original tendered work is recorded. In order to simplify the billing process and to clearly differentiate between the original work and the work resulting from the change order, work details pertaining to extra work orders should be separately accounted for.

Recommendation:

- 7. The Executive Director, Technical Services Division, ensure that policies and procedures for issuing extra work orders through change directives be complied with and separate documentation is used for recording work pertaining to extra work orders.**

B.2. Charges Pertaining to Undocumented Delays Should Be Analyzed Prior to Payment

The contracted price for the supply, installation, maintenance and removal of traffic detour control items was \$100,000 for the duration of the contract, initially estimated at four months. An additional \$25,000 work order charge for a one-month extension was paid based on a straight pro-ration of \$100,000. In our view, this simple pro-ration method was inappropriate and excessive when the contractor was only required to maintain the traffic detour control items, and

the costs pertaining to supply, installation and removal were already paid as part of the original contracted price. In addition, documentation as to the responsibility for the delay was not evident and extra work orders indicated no additional time was required to complete the contract.

Liquidated damages generally apply in instances when project delays occur. The Capital Works Projects, Procurement and Administration Procedures Manual indicates that on receipt of the application for substantial performance by the contractor, documentation should be developed identifying the rationale for either applying or not applying liquidated damages. This documentation then serves as a primary source to deal with future claims pertaining to project delays. Documentation relating to project delays was not prepared for this project.

Recommendations:

- 8. The Executive Director, Technical Services Division, review the payment made to the contractor for detour services for the period in excess of the original contract and, if appropriate, recover the overpayments. Future charges similar in nature be adequately reviewed prior to payment.**

- 9. The Executive Director, Technical Services Division, ensure that policies and procedures are followed to address and document project delays and, where applicable, liquidated damages are recovered on a timely basis.**

B.3. Splitting of Work Orders Has Resulted in Excess Payments Being Made to the Contractor

Our review identified that 11 individual extra work orders were issued for shoring and backfilling a Toronto Transit Commission wall. For payment purposes, these work orders were treated as individual work orders. In this particular case, the contract provides for a certain level of percentage markup for labour and material up to \$3,000. For amounts in excess of \$3,000, the percentage markup is reduced. As 11 separate work orders were issued, much of the work was charged at the higher markup level. If the work orders were accounted for as one work order, the charges would have been reduced. Similar circumstances were identified with payments for five

other extra work orders for electric work and two work orders paid for construction and removal work. Our calculation of the revised markup on these work orders indicates overpayments of approximately \$15,200.

We also noted that by not combining extra work orders pertaining to the same job, the appropriate signing authority is not being obtained. For example, a manager approved the 11 extra work orders individually that collectively amounted to approximately \$140,000, which should have been approved by the director. The process for executing and approving extra work orders appears to occur without supervisory review.

Recommendation:

10. The Executive Director, Technical Services Division, ensure that:

- (a) extra work is approved in accordance with authorized spending limits and splitting work orders for the same project be discontinued; and**
- (b) payment for extra work is reviewed for calculations, errors and omissions, and adequacy of supporting documentation.**

11. The Executive Director, Technical Services Division, take steps to determine and recover the overpayments made to the contractor in relation to the extra work orders relating to this particular contract.

B.4 The Cost of Substitute Material Used in Contracts Should Be Verified

A credit in the amount of \$10,915 was granted to the City by the contractor as compensation for using a substitute material in place of material originally required by the contract. The credit was provided to the City on the basis of the price difference between the substitute material and the material originally proposed in the contract. Based on our discussions, we understand that

management accepted the credit without validating the price of the substituted material used by the contractor.

Recommendation:

- 12. The Executive Director, Technical Services Division, ensure that any cost adjustments made for the substitution of materials contracted for are adequately reviewed for material quality, accuracy and reasonableness before approval.**

C. REVIEW OF CONTRACT TENDER DOCUMENTS

During our review of the tender document for this contract, it became apparent that certain items should have been initially included in the document. These items were paid for under extra work orders and included items such as the removal of existing guide rails and the removal of 2,825 meters of curb and gutter. For example, extra work orders were issued for the removal of curb and gutter at a unit price of \$14.25 per meter totalling approximately \$40,000. We noted that the subsequent Queensway westbound road contract award price for this particular service was \$5.80 per meter, a difference of \$8.45 or \$23,870.

Recommendation:

- 13. The Executive Director, Technical Services Division, ensure that wherever possible all required work is included in the original contract to limit extra work orders where a premium is paid.**

Contract specifications and the procedures manual do not include procedures to ensure verification of the required thickness of asphalt, concrete and granular material. Payment is based on square meters, and there is no documented process addressing the various methods of ensuring the required thickness was achieved.

Further, contract terms and conditions do not specify the components of eligible payroll costs charged by the contractor.

Recommendations:

- 14. The Executive Director, Technical Services Division, update the procedures manual to include procedures for verifying the thickness of asphalt, concrete and granular material before the release of payment.**
- 15. The Executive Director, Technical Services Division, develop procedures to ensure details of all charges, including labour rates payroll overhead costs, are agreed upon and form part of the original contract documents.**

D. COMPLIANCE WITH POLICIES AND PROCEDURES IN MANAGING CONSTRUCTION PROJECTS

As indicated previously, the Capital Works Projects, Procurement and Administration Manual is the key document used to administer construction projects. We noted a number of situations where there was non-compliance with the procedures outlined in the manual.

D.1. Daily Site Work Records Require Improvement

Completion of the daily work records is critical to the verification of payments and any subsequent claims. The Capital Works Projects, Procurement and Administration Manual states that site inspectors should keep a daily record of site activities and should include daily work performed by the contractor and subcontractors, material utilized, equipment on-site, detailed calculations supporting payment, and on-site testing and results. Our review of daily site work reports indicated that work is not always recorded in the Construction Inspector's Daily Report. In addition, details entered for the work performed are not complete and often omit details of work such as measurements, calculations, location references, details for equipment descriptions, subcontractor's work and equipment detail, testing and rework.

D.2. Details of Monthly Field Meetings are Not Maintained

The Capital Works Projects, Procurement and Administration Manual and contract terms and conditions specify that monthly field meetings were required to be held and documented regularly each month and more aggressively if required depending on the contract schedule. Our review of meeting minutes indicate there was only one meeting held on July 28, 2005 during the project. According to management, there were verbal site meetings held periodically, however, they were not documented. Documentation of site meetings is important in monitoring the continued progress of the project and open items or items requiring action.

D.3. Final Inspection Reports Require Improvement

The Capital Works Projects, Procurement and Administration Manual states that at the conclusion of the major portion of the construction works and prior to substantial performance, Technical Services project lead staff should assess and document the value of incomplete work and itemize deficiencies identified. A list of incomplete items and deficiencies was not developed in accordance with this procedure.

D.4. Lack of Confirmation of Final Quantities of Work Completed

Contract terms and conditions state that final work performed must be confirmed before release of the final payment. Our review indicates that payments are made based on additional work added to previous progress payments, and that the final inspection of work performed is not conducted before the release of the final payment certificate. A final inspection of services provided under the terms of the contract is important for payment accuracy and assessment of work completed.

D.5. Statutory Declaration and WSIB Clearance Forms Not Obtained Regularly

Contract terms and conditions require the receipt of a statutory declaration regarding payment for accounts from the contractor for each progress payment. The statutory declaration is a statement

from the contractor specifying that all subcontractors hired by the general contractor were paid for project related work. The Capital Works Projects, Procurement and Administration Manual requires that WSIB clearance be obtained by the contractor at the first and final payments, and for all subcontractors at the time of release of the substantial completion certificate. These forms were received only from the contractor at the time of release of substantial performance. As well, we noted WSIB clearance was not received for any subcontractors. Failure to receive statutory declarations for payment to accounts and WSIB certificates may result in legal and financial risks to the City.

Recommendation:

16. The Executive Director, Technical Services Division, take steps to ensure compliance with policies and procedures in relation to:

- **documenting the daily work completed in the Field Inspector's Daily Work Report;**
- **documentation of monthly field meetings;**
- **preparation of the Deficiency List and List of Incomplete Items on achieving substantial completion;**
- **confirmation of final inspection before release of final payment; and**
- **obtaining statutory declaration and WSIB clearance as required by the procedures manual.**

CONCLUSION

The objective of this review was to assess whether the Technical Services Division has appropriate and effective controls over the management of construction contracts. Our review focused on contract administration, processing of payments and compliance with relevant policies, procedures and contracts.

The Technical Services Division has made progress in standardizing operating procedures and practices to manage construction contracts since amalgamation. Our review, however, identified a number of areas requiring strengthened management controls and improved project management processes, some of which are currently being addressed by management. This review also identified a number of opportunities and specific instances for recovery of excess payments.

Addressing the recommendations in this report will provide for more effective management of City resources and enhance the overall effectiveness of contract management and payment processes.

**Management Response to the Auditor General’s Review of
Management of Construction Contracts – Reconstruction of Queensway Eastbound Lanes**

<u>Rec No</u>	<u>Recommendation</u>	<u>Management Comments: Agree/Disagree</u> <i>(Comments if Disagree/ Additional Comments, if any.)</i>	<u>Action Plan/ Time Frame</u>
1.	<p>The Executive Director, Technical Services Division, develop policies to ensure that:</p> <ul style="list-style-type: none"> (a) Construction Inspector’s Daily Reports are adequately completed providing all relevant details such as calculations, measurements and work location references supporting payment; (b) documentation supporting progress payments are diligently reviewed in detail by supervisory staff; and (c) all such policies and procedures are communicated to the appropriate staff. 	<p>a) Agree. On September 8, 2005, the Executive Director Technical Services issued a memo to Directors and Managers regarding Revised Construction Contract Management Provisions. Within the Section on Time Management, the memo clarifies the duties of the Construction supervisor regarding the time of the site inspector. Construction Supervisors are to meet with their staff at least once a week to review various items including the inspector’s daily reports. Inspectors are required to record the dates, times and work locations on the daily reports. The Procedure Manual will be updated to include calculations, measurements and work locations.</p> <p>b) Progress payment templates were harmonized in April 2006. Quantities of work done and payment are now tallied on the progress payment certificate. A process to have three signatures (Construction supervisor, project engineer & manager) to certify & approval payment been developed. A memo outlining the Supervisor of Construction to perform random audit of documentation supporting payments will be prepared</p> <p>c) Memos to staff are generally cascaded to front line staff by Email and discussed at staff meetings. Although adequate policies are in place, it is difficult to obtain compliance with policies when there are insufficient inspection staff resources to adequately monitor all contract activities.</p>	<p>a) Procedures Manual to be revised by December 2006</p> <p>Harmonized Inspection Reports to be completed by year end.</p> <p>Implementation of new requirements on-going</p> <p>b) Memo to be issued by December 2006</p> <p>c) The Procedures Manual is available from City’s Intranet and the Manual is updated annually. Mid-year changes are communicated electronically by email.</p>

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2.	The Executive Director, Technical Services Division, take steps to determine and recover over payments made to the contractor identified as part of this review.	Agree. Project Staff will attempt to recover over payments identified in this review prior to issuing the final payment certificate.	Attempt to recover funds by March 31, 2007
3.	<p>The Capital Works Projects, Procurement and Administration Procedures Manual be revised to include details relating to the work requested by third parties during the course of City contracts. The manual should address:</p> <ul style="list-style-type: none"> - the specific circumstances when third-party work should be undertaken; - the requirement for written agreements for all third-party work conducted; and - policies and procedures relating to the billing and recovery of agreed upon costs. 	Agree. The manual will be revised to include a section dealing with work requested by third parties. Although we agree that there should be written documentation supporting the scope and price of the work, we do not feel that formal agreements are practical or required at all times.	Revise Procedures Manual by December 2006

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4.	The Executive Director, Technical Services Division, ensure that all contracts contain provisions relating to any excess equipment or supplies purchased. While there may be certain circumstances where it is not possible to determine the exact amount of equipment or supplies required, there should be specific provisions in each contract to determine how such matters are dealt with.	Agree. The purchase of excess equipment or supplies is not usually performed in our construction contracts. Therefore, there is no need to add such provisions to our contracts. However, Technical Services will inform staff not to enter into these arrangements without Director's approval by a memo. The memo from staff will include the details on the use of the equipment or supplies, the reasons why there may be excessive supply in the contract and the proposed method(s) of disposition of the excess materials.	Memo to be issued by December 2006
5.	The Executive Director, Technical Services Division, review the possibility of recovering the \$2,000 "administrative premium" charged by the contractor in connection with supplies purchased from the contractor by the City.	Agree. Project Staff will attempt to recover the \$2,000 administration premium identified in this review prior to issuing the final payment certificate.	Attempt to recover funds by March 31, 2007

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6.	<p>The Executive Director, Technical Services Division, develop appropriate controls and processes to ensure that:</p> <p>(a) inspection reports prepared by third-party consultants are reviewed and adequately monitored;</p> <p>(b) follow-up actions on work failing agreed upon standards are taken and documented;</p> <p>(c) reworks are validated and actions not yet taken on failed tests are completed prior to the final payment on the project; and</p> <p>(d) information relating to tests performed by consultants are maintained.</p>	<p>Agree. On August 1, 2006 District Engineering Services distributed to its staff “A Field Guide to Materials Inspection and The Minimum Standards for Material Testing” as an interim measure. Final revision of the field guide will be rolled out in December 2006.</p> <p>The Procedures Manual will be revised to reflect this.</p>	<p>Bulletin to be issued by December 2006.</p> <p>The Procedures Manual will be revised by December 2006</p>

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7.	The Executive Director, Technical Services Division, ensure that policies and procedures for issuing extra work orders through change directives be complied with and separate documentation is used for recording work pertaining to extra work orders.	Agree. Although Extra Work Order forms are required to be completed prior to commencement of extra work, this is not always practical during construction operations performed on a time and materials basis. Technical Services will develop a harmonized Change Directive so that, as a minimum, at least a hand written authorization to proceed with extra work performed on a time and material basis is given to the contractor prior to the commencement of the work. For other types of extra work not performed on a time and materials basis, the contractor must be required to submit a written proposal that must be agreed to in writing prior to the commencement of the work as per the current manual. Technical Services will issue a memo explaining the use of the change directive form as well as reminding staff of the requirements for the Extra Work order form and Extra Work order summary form. A separate form to record extra work will also be developed.	Issue memo and revise Procedures Manual by December 2006
8.	The Executive Director, Technical Services Division, review the payment made to the contractor for detour services for the period in excess of the original contract and, if appropriate, recover the overpayments. Future charges similar in nature be adequately reviewed prior to payment.	Agree. Project Staff will attempt to recover payment made for traffic control for the period in excess of the original contract.	Attempt to recover funds by March 31, 2007

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9.	<p>The Executive Director, Technical Services Division, ensure that policies and procedures are followed to address and document project delays and, where applicable, liquidated damages are recovered on a timely basis.</p>	<p>Agree. Technical Services will issue a memo reminding staff that on receipt of the application for substantial performance by the contractor, documentation should be developed identifying the rationale for either applying or not applying liquidated damages and that liquidated damages should be applied where appropriate. . A memo will be issued to allow the Note to File to be issued at final payment. Criteria to follow up time extension & project delay will be established</p>	<p>Issue memo and revise Procedures Manual by December 2006</p>
10.	<p>The Executive Director, Technical Services Division, ensure that:</p> <p>(a) extra work is approved in accordance with authorized spending limits and splitting work orders for the same project be discontinued; and</p> <p>(b) payment for extra work is reviewed for calculations, errors and omissions, and adequacy of supporting documentation.</p>	<p>Agree. However, when extra work is performed on a time and materials basis, it is not always possible at the outset to know what the full cost of the work will be and therefore not possible to tell what the proper authorization limit is. In the case documented in the audit report, 11 extra work orders were issued for shoring and back filling performed on a time and materials basis covering a large area over a long period of time. The extra work orders were issued as the work progressed in a linear manner. The only way to prevent this would be to agree to a lump sum proposal from the contractor before the work is started which may have resulted in higher costs because the contractor would need to factor in his risks associated with the unknown. Extra Work Orders should be combined into one for discreet, continuous work only.</p>	<p>Issue memo and revise Procedures Manual by December 2006</p>

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		<p>Management staff will continue to random audit field records & payment reports. Additional staff resources are needed to verify extra work payment.</p> <p>A memo outlining the Supervisor of Construction and the Contract Administration to perform random audits of calculations to be issued.</p> <p>Technical Services will review the appropriateness of performing extra work on a time and materials basis given the current trend for tighter management controls on construction contracts.</p> <p>Technical Services will issue a memo to inform staff not to split extra work orders.</p>	<p>Issue memo by December 31, 2006</p>
11.	<p>The Executive Director, Technical Services Division, take steps to determine and recover the overpayments made to the contractor in relation to the extra work orders relating to this particular contract.</p>	<p>Agree. Project Staff will attempt to recover the \$15,200 associated with the higher markups for the 11 separate extra work orders for shoring and backfilling prior to issuing the final payment certificate.</p>	<p>Attempt to recover funds by March 31, 2007</p>

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12.	The Executive Director, Technical Services Division, ensure that any cost adjustments made for the substitution of materials contracted for are adequately reviewed for material quality, accuracy and reasonableness before approval.	Agree. Project staff will minimize substitution of material in contracts whenever possible. Quotation from contractors should be included in bid submission if the use of alternative materials is anticipated.	Issue memo and revise Procedures Manual by December 2006
13.	The Executive Director, Technical Services Division, ensure that wherever possible all required work is included in the original contract to limit extra work orders where a premium is paid.	Agree. On May 10, 2006 Technical Services issued a memo to staff implementing a Tender Document Checklist developed to improve the quality of tender documents. Projects are to be tendered only after the requirements in the appropriate pre-tender approval checklists are satisfied.	Completed
14.	The Executive Director, Technical Services Division, update the procedures manual to include procedures for verifying the thickness of asphalt, concrete and granular material before the release of payment.	Agree. The final version of the document “A Field Guide to Material Inspection and the Minimum Standards for Thickness” will include thickness checking to concrete & asphalt structures. Related construction specifications will be revised to meet testing requirements.	Finalize field guide by December, 2006

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15.	The Executive Director, Technical Services Division, develop procedures to ensure details of all charges, including labour rates payroll overhead costs, are agreed upon and form part of the original contract documents.	Agree. Technical Services will consult with the TTC, Legal Services and other agencies to determine an appropriate method of including this item in the contract documents.	Review matter by March 31, 2007
16.	<p>The Executive Director, Technical Services Division, take steps to ensure compliance with policies and procedures in relation to:</p> <ul style="list-style-type: none"> - documenting the daily work completed in the Field Inspector’s Daily Work Report; - documentation of monthly field meetings; - preparation of the Deficiency List and List of Incomplete Items on achieving substantial completion; - confirmation of final inspection before release of final payment; and - obtaining statutory declaration and WSIB clearance as required by the procedures manual. 	<p>Agree. Technical Services will issue a memo to remind staff of the requirements regarding these items. Technical Services also will continue to request additional staff resources to compensate for the increasing capital program and contract management requirements.</p> <p>Although adequate policies are in place, it is difficult to obtain compliance with policies when there are insufficient project management and inspection staff resources to adequately administer and monitor all contract activities.</p>	Issue memo by December 31, 2006