

**APPENDIX 1**

**TORONTO ZOO  
CONSTRUCTION CONTRACTS REVIEW -  
TUNDRA PROJECT**

**January 11, 2010**

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 **TORONTO** Auditor General's Office

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Jeffrey Griffiths, C.A., C.F.E.  
Auditor General  
City of Toronto

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## EXECUTIVE SUMMARY

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***Tundra Project,  
Phase I of North  
Zoo Site  
Redevelopment  
Project was the  
focus of this  
review***

The Toronto Zoo has undertaken a major multi-phase capital project to redevelop the north zoo site. The project resulted from a 2003 North Zoo Site Redevelopment Feasibility Study, which recommended a reorganization of the area. The Tundra project, which is the first phase of the North Zoo Site Redevelopment project, was the focus of this review.

***Previous  
construction  
contract reviews  
conducted by the  
AG Office***

The Auditor General's Office has completed previous reviews of specific construction contracts in the City including:

- Toronto Water and Sewer Emergency and Repair (2007)
- Leaside Bridge Structure Rehabilitation (2007)
- Reconstruction of Queensway Eastbound Lanes (2006)

***Other contract  
reviews  
conducted by the  
AG Office***

More general reviews have also been conducted including reports on contract compliance in 2003, Contract Management Issues in 2005, and Improving the Procurement Process – Unbalanced Bids in 2007.

Other contract management reviews have been conducted at the Toronto Transit Commission and the Toronto Police Service. While these were not construction contract reviews, they address best practices relating to contract management in general. These reviews include:

- Management of Information Technology Projects – Opportunities for Improvement, Toronto Transit Commission (2008)
- Enterprise Case and Occurrence Processing System (eCOPS) Project – Toronto Police Service (2005)

***Construction  
contract reviews  
included in AG's  
2009 Audit Work  
Plan***

The Auditor General's 2009 Audit Work Plan included construction contract reviews in the City and its agencies, boards and commissions. The Toronto Zoo was selected based on the extent of its ongoing and significant capital expenditures.

***Project Costs***

The Zoo's Tundra Project included the construction and rehabilitation of various exhibits such as the polar bear, arctic wolf, exotic bird, fox and reindeer exhibits. The project was initially tendered in 2006, but was canceled as tenders exceeded the budget. As a result, scope reductions were made and the project was re-designed and re-tendered in 2007. The construction contract was awarded to the lowest bidder for a lump-sum cost of \$11.2 million. The fox and reindeer exhibits which were part of the scope reductions were subsequently completed by the Zoo using in-house staff and other vendors. The total construction and design costs for the Tundra Project are projected to be \$14.4 million or less than one per cent under the budgeted amount. The total approved budget for the project was \$14.5 million.

***Project Completion***

The construction contract stipulated that the Tundra Project be completed by November 30, 2008. The project was substantially completed in July 2009. Several factors contributed to the delay, which were outside management control. The Tundra Exhibit was officially opened on August 1, 2009.

***Key areas for improvement***

While controls and processes relating to contract management were in place, our review identified the following areas where procedures could be further improved and controls strengthened to enhance the overall effectiveness of contract management practices.

Construction Management

- Dollar values need to be assigned to major segments of the project to ensure payments are commensurate with the amount of work completed
- The company conducting inspection and testing should be hired by the Zoo, not the contractor
- The monitoring of inspection and testing of construction materials needs improvement

### Contract Administration

- Change order justification needs to provide more detail
- Potential for cost recovery should be explored for change orders due to design deficiencies
- Contract terms could be strengthened to include a right to audit clause

### Procurement and Financial Policies and Procedures

- Procurement policies should provide guidelines with respect to assessing whether bids meet required criteria
- Procurement decision documentation needs to be improved
- Spending authority for amounts in excess of approved commitment needs to be reviewed and should include fixed dollar limits
- Project cost estimation process should be improved

Our report includes 13 recommendations related to opportunities to strengthen internal controls over tendering, award and management of construction contracts. While opportunities exist for potential cost recoveries, the amount is not determinable at this time.

Finally, the Auditor General has issued a separate letter to management outlining other less significant issues that came to our attention during the audit. These issues related to strengthening payment controls.

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## **BACKGROUND**

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### ***Toronto Zoo operations***

The Toronto Zoo is operated by a board of management on behalf of the City of Toronto, with an approved 2009 operating budget of \$43 million. The Toronto Zoo has over 5,000 animals and 1.2 million visitors per year. The Zoo has four major indoor pavilions and numerous outdoor exhibits.

North Zoo Site Redevelopment Project

***Original Budget  
for North Zoo  
Site  
Redevelopment  
Project***

The Toronto Zoo’s approved 2009-2018 capital budget of approximately \$205 million included \$43 million for the North Zoo Site Redevelopment project. This project resulted from the North Zoo Site Redevelopment Feasibility Study, conducted by an outside consultant and approved by the Zoo Board in September 2003, recommending a major reorganization of this area.

The North Zoo Site Redevelopment project completion plan includes multiple phases as follows:

- Phase I – Tundra Project, an expansion of the existing polar bear exhibit and development of other Tundra exhibits
- Phase II – Eurasia Rehabilitation
- Phase III – Mixed Woodland Biome/Boreal Forest Biome
- Phase IV – Tropical Americas Rehabilitation

***Tundra Project  
Costs***

The total costs of the Tundra Project were as follows:

Description	Amount
	(in thousands)
Construction Costs	\$13,092
Design and Consulting Costs	1,297
Total Costs	14,389
Total Approved Budget	14,452
Amount Under Budget	\$63

Of the total construction costs, approximately \$12.4 million pertains to the main construction contract. The balance of \$700,000 pertains primarily to the construction of the fox and reindeer exhibits managed by in-house staff through other vendors.

### Construction Contract

***Tundra  
construction  
contract award  
for \$11.2 million***

The construction contract for the Tundra Project was originally tendered in October 2006. However, the tender was canceled because responses ranged from \$14 to \$18 million, all exceeding the initial construction budget of \$10 million. With scope reductions, the project was re-tendered in April 2007. The responses for the second tender call still exceeded the budget, with the lowest bid at \$11.2 million. The Zoo obtained commitment for additional funding of \$2.5 million from the Toronto Zoo Foundation in May 2007. The Board approved in June 2007 the awarding of the construction contract to the lowest tender for \$11.2 million, plus contingency of \$1 million, for a total budget of \$12.2 million. Actual costs related to this contract are projected to be \$12.4 million.

### Design and Consulting Costs

***Consulting  
contract award  
for \$3.4 million***

The consulting contract was awarded in February 2005 through a request for proposal process. The total value of the contract is \$3.4 million for overall design of the North Zoo Site Redevelopment project, detailed design of the various phases of the project and contract management. Of this amount, approximately \$956,000 pertained to Phase I - Tundra Project. Design and consulting costs for the Tundra Project are projected to be approximately \$1.3 million. This includes other costs such as surveys and permits and additional redesign costs for the fox exhibit.

***Project status***

The Tundra Project was scheduled for completion by November 30, 2008. The 10-acre Tundra Trek Exhibit was substantially completed in July 2009 and officially opened on August 1, 2009. Several factors contributed to the delay. For example, the removal and transfer of polar bears were delayed as the receiving zoo was not ready. In addition, additional funding had to be obtained before the project could begin. At the time of this report, final inspection has not yet taken place and final payment has not yet been made.

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## AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

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***Auditor  
General's 2009  
Audit Work Plan***

The Auditor General's 2009 Work Plan included a review of the adequacy of controls in tendering, award and management of selected construction contracts at various City agencies, boards and commissions. In this context, the Toronto Zoo was selected for review based on the extent of ongoing capital expenditures.

***Audit objective***

The objective of this review was to assess the adequacy of controls over construction contracts in ensuring:

- Contracts are awarded in an open, fair and competitive process
- Contracts provide adequate terms and conditions that protect the interests of the Toronto Zoo and the City of Toronto
- Projects are completed in accordance with contract terms and conditions, as well as established policies and procedures
- Projects are completed on time and within budget
- Contract payments are accurate, properly authorized and supported by adequate documentation.

***Audit scope***

This review focused on construction and consulting contracts related to the Tundra project. The review covered transactions for the period April 2007 to September 2009, from the time the tender documents were issued to the time of substantial completion of the project.

***Audit methodology***

Our audit methodology included the following:

- Review of policies and procedures
- Interviews with staff of Toronto Zoo and City Legal Services Division
- Interviews with the contractor and consultants
- Physical observation of the project site
- Examination of documents and records
- Review of related meeting minutes
- Review of Auditor General construction contract and contract management audit reports and related reports of other municipalities
- Other procedures deemed appropriate

***Compliance with generally accepted government auditing standards***

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that provides a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## **AUDIT RESULTS**

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### **1. CONSTRUCTION MANAGEMENT PRACTICES NEED IMPROVEMENT**

#### **1.1 Schedule of Values Need to be Established Prior to First Progress Payment**

Both the construction and consulting contracts were awarded as lump-sum contracts, stipulating that monthly payments be made based on a percentage of the value of work completed according to the estimate of the Zoo's Chief Executive Officer.

***Need for  
schedule of  
values***

In order to ensure progress payments are commensurate with the amount of work completed and facilitate project monitoring, the contractor should be required to submit a schedule of values allocating the entire contract sum to significant segments of the project. Such a schedule, acceptable to the consultant and the Zoo, should then be used as the basis for reviewing the value of work completed.

The requirement for a schedule of values was not stipulated in the contract. Consequently, staff experienced difficulty in obtaining such a schedule from the contractor.

***Basis of actual  
contractor  
payments***

Actual contractor payments were made based on values provided by the contractor on specific areas as completed. A detailed breakdown of values supplied by the contractor to support progress payments evolved over the life of the contract. Staff and the consultant indicated that their assessment for reasonableness was based on the overall work required to be done and their estimate of the value of work remaining.

***Basis of actual  
consultant  
payments***

Actual consulting payments were also made based on a percentage of services completed as determined by the consultant, but without a detailed breakdown of completed project milestones.

***Contracts did not  
contain a right to  
audit clause***

In addition, both the construction and consulting contracts did not contain a right to audit clause. Without a right to audit clause, it is difficult to conduct third party verification of costs or examine relevant project documentation, particularly with respect to change orders and expense reimbursements.

While the tender call and contract documents were prepared in consultation with the City Legal Services Division, it is management's responsibility to ensure that contracts contain adequate terms and conditions relevant to the project. City staff are currently reviewing contracts with a view to developing standard templates for the City, which can also be used by agencies, boards and commissions.

**Recommendations:**

- 1. The Chief Executive Officer, Toronto Zoo, in consultation with the City Solicitor, modify the standard templates for call documents and agreements to include:**
  - a. A schedule of values allocating the entire contract amount to major segments of the project acceptable to the consultant and the Zoo, on which payments should be based. The schedule should be provided by the contractor prior to the first progress payment**
  - b. A right to audit clause.**
- 2. The Chief Executive Officer, Toronto Zoo, in consultation with the City Solicitor, take appropriate steps to ensure that:**
  - a. The Zoo's standard templates for call documents and agreements are compared periodically with City call documents**
  - b. Relevant City clauses are adopted, where appropriate**
  - c. Any alterations to the Zoo's standard terms and conditions are approved, in writing, by the City Solicitor.**

**1.2 Controls over Inspection and Testing Need Strengthening**

Hiring of Inspection and Testing Agency

The construction contract included a cash allowance of \$50,000 to pay for various inspections and testing such as soil compaction, concrete strength, backfill material, roofing and structural steel inspection.

***Inspection and testing agency is hired by the contractor***

The contractor hires an engineering consulting agency to conduct inspection and testing, on the advice of the Zoo. However, given that the agency is hired and paid by the contractor, this practice impairs the inspector's independence in appearance, if not in fact. In order to maintain the integrity of the inspection and testing process, the inspection and testing agency should be hired directly by the Toronto Zoo.

## Monitoring of Inspection and Testing

***The tracking of inspections and testing should be strengthened***

The construction contract required that the contractor submit to the consultant a quality control checklist, outlining activities to be performed before concrete work is done. Staff indicated that none was submitted.

While we found some evidence that work completed was compared to design specifications, there was no process in place to track the type of inspections conducted, required testing completed and whether inspections and tests had satisfactory results. A checklist should be used for this purpose.

### **Recommendations:**

- 3. The Chief Executive Officer, Toronto Zoo, establish policies and procedures for inspection and testing to include:**
  - a. Selection and hiring of inspection and testing agency independent of the contractor**
  - b. Inspection type, frequency, timing and quality**
  - c. Review and monitoring of inspection and testing**
  - d. Required level of documentation and retention of inspection and testing reports**
  - e. Checklist to facilitate tracking of required inspection and testing processes.**
- 4. The Chief Executive Officer, Toronto Zoo, develop appropriate controls and processes to ensure inspection reports prepared by inspection and testing agencies, and site review reports prepared by consultants are adequately reviewed and monitored.**

## **2. CONTRACT ADMINISTRATION PRACTICES NEED IMPROVEMENT**

### **2.1 Change Order Documentation Needs Strengthening**

*Over 80 change orders issued for \$1.2 million or 11 per cent of contract amount*

As is common in construction projects, change orders are issued generally for additional or unanticipated extra work and materials. For the Tundra Project, the Toronto Zoo approved over 80 change orders totaling \$1.2 million or 11 per cent of the original construction contract amount. While change orders generally provided information on the nature of the work required, they did not always provide adequate detail regarding justification for the extra work.

*Change order justification needs more detail*

For example, it could not be readily determined whether the extra work was due to:

- Design deficiencies arising from errors or omissions by the architect or consultants
- Errors or omissions by the Zoo or the contractor
- An unknown condition that could not have been identified during project design
- User requests for scope changes not included in the original project.

Justification for change orders should contain sufficient detail enabling management to reasonably assess whether to undertake the extra work and to determine whether certain costs could be recovered.

#### **Recommendation:**

- 5. The Chief Executive Officer, Toronto Zoo, establish procedures requiring that all change orders provide sufficient business case details for the extra work to identify:**
  - a. Whether the extra work is due to errors or omissions by the consultant, contractor or staff**
  - b. Whether certain costs could be recovered from the consultant or contractor in accordance with contract terms and conditions.**

## 2.2 Potential to Recover or Minimize Costs for Change Orders

*Change orders due to discrepancies or omissions in consultant drawings and specifications*

### Change Orders due to Design Deficiencies

Our review noted that certain extra work orders were due to discrepancies or omissions in the drawings and specifications provided by the consultant. While we did not review these changes in detail, we understand additional costs were incurred as a result of the changes. Zoo management should consider whether to seek compensation for the design deficiencies.

#### **Recommendation:**

- 6. The Chief Executive Officer, Toronto Zoo, in consultation with the City Solicitor, explore the possibility of pursuing the recovery of additional costs arising from design deficiencies.**

*Change orders due to incorrect “as-built” drawings*

### Change Orders due to Incorrect “As-Built” Drawings

The Toronto Zoo incurred an additional \$168,000 for extra underground site services resulting from incorrect “as-built” drawings provided by the Toronto Zoo. “As-built” drawings outlined the location of underground site services such as water and sewer pipes, some of which were prepared at the time the Zoo was built 30 years ago.

Given the age of the infrastructure, an underground site survey conducted prior to construction would have been appropriate to ensure the accuracy of the “as-built” drawings. While survey costs would still have been incurred, they would be significantly lower than the cost of subsequent change orders due to inaccurate “as-built” drawings. In addition, an allowable margin of error with respect to the accuracy of such drawings should be provided in the contract.

Staff indicated that underground site surveys were completed prior to starting Phase 2 – Eurasia of the North Zoo Site Redevelopment project.

**Recommendation:**

- 7. The Chief Executive Officer, Toronto Zoo, in consultation with the City Solicitor, review the standard contract terms with respect to the accuracy of “as-built” drawings and consider modifying to provide an allowable margin of error.**

### **2.3 City Capital Billing Process Needs Improvement**

*No City  
guidelines on  
capital billings  
for agencies,  
boards and  
commissions*

The City of Toronto, through its capital works program, finances the Zoo’s capital costs. The Toronto Zoo submits capital billings to the City for reimbursement of costs related to its capital projects.

City policies on the capital works program do not provide guidelines on capital billings from agencies, boards and commissions, particularly with respect to the timing and frequency of billings, payment of holdback and receipt of external funding. City staff indicated that billing frequency and timing and the management of holdbacks are at the discretion of the agency, board or commission.

The Zoo bills the City 100 per cent of all capital costs, including holdbacks even if not yet paid to the contractor. As a result, the Zoo was advanced more funds than necessary, resulting in the City losing interest revenue generated if such funds were held by the City. It should be noted that in 2009, the Zoo earned interest of 1.5 per cent on its funds, compared to 5.04 per cent by the City.

In addition, although the Toronto Zoo received \$2.5 million funding from the Toronto Zoo Foundation, this amount was not reflected on the capital billings to the City. Staff indicated that this amount was retained to offset expenditures and will be adjusted at the final billing.

## Capital Reports

While the City keeps a record of the Zoo's capital expenditures based on capital billings, the City does not provide the Zoo with detailed capital reports. As a result, difficulty arises in reconciling the capital expenditures between the City's and Zoo's records at year-end. To ensure the integrity of accounting records, the City should provide the Zoo and other agencies, boards and commissions with capital reports to facilitate the reconciliation of the capital accounts. This would also help ensure that discrepancies are identified and addressed on a timely basis.

### **Recommendations:**

- 8. The Deputy City Manager and Chief Financial Officer review capital billing procedures and take appropriate steps to:**
  - a. Establish policies and procedures with respect to capital billings from agencies, boards and commissions, including the timing and frequency of billings, payment of holdback and receipt of external funding**
  - b. Communicate such policies and procedures to the agencies, boards and commissions.**
- 9. The Deputy City Manager and Chief Financial Officer take appropriate steps to provide agencies, boards and commissions with appropriate capital reports on a periodic basis to facilitate the reconciliation of all capital accounts.**

### **3. PROCUREMENT AND FINANCIAL POLICIES AND PROCEDURES NEED STRENGTHENING**

#### **3.1 Need for More Comprehensive Procurement Guidelines**

The Toronto Zoo has established formal policies and procedures with respect to procurement and financial controls, such as:

- Financial Authorities Bylaw 1-97 (1997) – establishes requirements for contracts, tenders, requests for proposals and requests for quotations, as well as spending authorization limits
- Purchasing Goods and Services Policy (1999) – outlines basic purchasing principles and practices
- Project Procedure (1999) – outlines process for approval and monitoring construction and renovation projects.

*Draft revised purchasing policies not yet approved by the Board*

Staff recognize that existing policies and procedures are outdated and a process is underway to update them. Revised purchasing policies have been drafted, which provide more detail with respect to the procurement process, but have not yet been approved by the Board.

*Consider using City checklist for irregular bids*

While the draft policies provide more detail, they do not include guidelines with respect to irregular bids. The City has developed a checklist to facilitate assessing whether bids meet the required bid criteria. Although management discretion is allowed in dealing with certain deficiencies in tender documents, the checklist serves as a tool in helping management ensure a fair, open and competitive process in a consistent manner. Management should consider developing a similar checklist appropriate for the Zoo.

**Recommendation:**

**10. The Chief Executive Officer, Toronto Zoo, in consultation with the City Solicitor:**

- a. review the City checklist for assessing bid irregularities and develop a similar checklist appropriate for the Zoo**
- b. develop procedures to conduct a periodic review of any changes to City of Toronto procurement practices and adopt changes, as appropriate**
- c. review and update draft purchasing policies and submit them for Board approval.**

**3.2 Documentation Supporting Procurement Decisions Needs Improvement**

The Toronto Zoo maintains purchasing and contract files for construction projects. However, documentation maintained needs improvement.

*Some documents were missing*

While purchasing and contract files reviewed contained most key documents necessary to support procurement decisions, some documents were missing such as Fair wage approval and cancellation of original construction tender.

*Need for guidelines related to adequate supporting documentation*

There is also no guideline regarding required documentation to support procurement decisions or retention requirements. Maintaining an adequate level of documentation supporting procurement decisions provides evidence of compliance with policies and procedures, as well as ensuring the integrity of the purchasing process.

**Recommendations:**

- 11. The Chief Executive Officer, Toronto Zoo, establish a guideline for adequate documentation to support procurement decisions and retention requirements, and develop procedures to monitor staff conformance with the guideline.**
- 12. The Chief Executive Officer, Toronto Zoo, review all current contracts to ensure Fair Wage approval has been obtained and documentation of such approval is retained.**

### 3.3 Spending Authority Should Have Fixed Dollar Limit

*No dollar limit on expenditures exceeding authorized commitment*

The Toronto Zoo has established a Financial Authorities Bylaw outlining spending authority limits. Section 11.1 stipulates that the General Manager may make a commitment not exceeding \$100,000 in any one instance, provided that the Board has provided funds or approved the project and related funding.

Section 11.2 further states that the General Manager may authorize an additional expenditure on an authorized commitment exceeding \$200,000, an amount equal to the sum of 15 per cent of the first \$200,000 and 10 per cent of the remainder. However, there is no fixed dollar limit on the additional expenditure as long as the excess is within stated percentage guidelines.

*Not clear whether expenditures over \$100,000 require Board approval*

We noted that change orders over \$100,000, although within 10 per cent of the original contract amount, were approved by the Chief Executive Officer without Board approval. Staff explained that these were within the authority of Section 11.2 and within management's contingency originally approved by the Board.

*City policies provide upset limit for amounts exceeding approved commitments*

We compared this provision to City of Toronto policies. While City policies also provide percentage guidelines for amounts exceeding approved commitments, they stipulate a fixed dollar limit consistent with the standard spending authority limit.

Given that the Toronto Zoo is entering into multi-million dollar contracts, consideration should be given to establishing a fixed dollar limit on management authority for expenditures exceeding approved commitments.

#### **Recommendation:**

**13. The Toronto Zoo Board of Management review and confirm spending authority limits for amounts exceeding approved commitments and consider establishing a fixed dollar limit on each instance.**

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## CONCLUSION

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This report presents the results of our review of construction contracts related to the Toronto Zoo Tundra Project. The objective of this review was to assess whether the Toronto Zoo has appropriate and effective controls over the management of construction contracts.

Our review identified issues related to construction management, contract administration and procurement policies and procedures.

Implementing the recommendations contained in this report will strengthen controls, improve accountability and enhance the overall effectiveness of contract management and payment processes. Recoveries of excess payments are also possible.