



OFFICE OF THE
City Auditor

Queen Elizabeth Park – Phase 1 Review

June 6, 2016

The Office of the City Auditor conducted
this project in accordance with the
*International Standards for the
Professional Practice of Internal Auditing*

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Executive Summary

In January 2016, a City of Edmonton employee communicated a number of concerns to the Office of the City Auditor (OCA) about the first phase of a Queen Elizabeth Park construction project. The objective of this review was to evaluate and assess these concerns, as they indicated potentially significant risks to the City of Edmonton.

These identified risks related to:

1. The procurement process and the qualifications of Contractor A.
2. The sharing of land surveying information with Contractor A by City of Edmonton.
3. The lack of support for an amount claimed by Contractor A on an invoice.
4. The questionable quality of the lower asphalt trail.

Based on our review, we conclude that the first three of these risks were sufficiently managed, or that they were subsequently mitigated by Administration.

The remaining risk related to the quality of an asphalt multi-use trail was not handled appropriately and has exposed the City to unnecessary risk. The General Supervisor decided to not include the results of additional quality assurance tests in the evaluation of the lower asphalt trail. These additional tests were conducted above the minimum requirement and were directed by the Project Manager. Upholding this decision could result in the asphalt trail being accepted below the quality specifications, impacting its intended lifespan.

We recommend that the City, as part of the Construction Completion Certificate process, reviews all previous quality assurance test results and inspections conducted to determine the appropriate course of action to ensure the City receives a multi-use trail that is in conformance with City Design and Construction Standards.

In addition to the review of the identified risks, we also chose to review the status of the contract to-date. The contract is over the original construction budget, delayed, and the quality of a portion of the product is suspect. Additional factors besides the concerns brought forward have contributed to this situation including the discovery of foundation wall of a former brewery that had to be removed.

We are aware that the current Project Manager and the General Supervisor are continuing to work with the contractor to mitigate ongoing risk issues that have adversely affected the project performance to ensure a positive outcome of the project by the end of July 2016.

Queen Elizabeth Park Phase 1 Review

1. Introduction

In January 2016, a City of Edmonton employee communicated a number of concerns to the Office of the City Auditor (OCA) about the first phase of a Queen Elizabeth Park construction project. The objective of this review was to evaluate and assess these concerns, as they indicated potentially significant risks to the City of Edmonton.

2. Background Queen Elizabeth Park Development

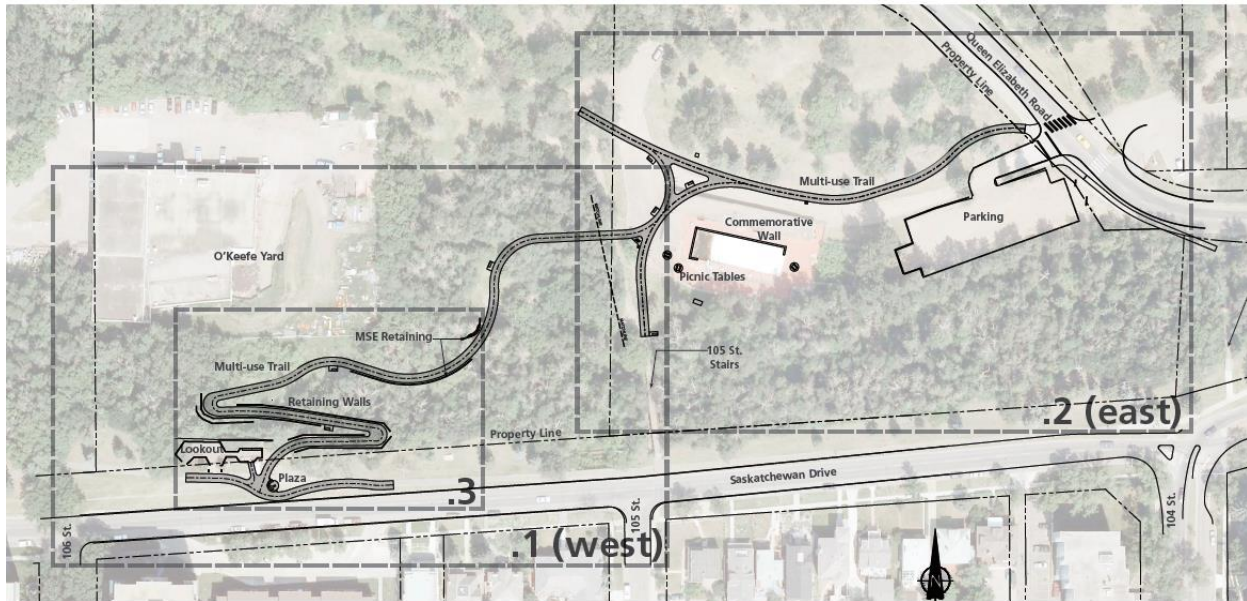
The Queen Elizabeth Park Master Plan was approved by City Council on August 28, 2013. The master plan guides the phased development of Queen Elizabeth Park, which will take approximately 10 years. The master plan includes improvements in the upper park, an Indigenous public art park, upgrading or creating new look-outs along Saskatchewan Drive and the development of a new accessible trail into the park from Saskatchewan Drive. Proposed improvements in the lower park include a bike skills park, steps down to the river, an all-season washroom building, new trail connections, upgraded picnic and play areas, interpretive elements, a toboggan hill, an overpass over Queen Elizabeth Park Road and additional space for a permanent and transitory public art.

In 2014, the City of Edmonton tendered the Queen Elizabeth Park – Phase 1 (QEP1) project for a budgeted value of \$1.4 million. This first phase included the construction of an accessible, asphalt walking trail from the lookout at 106th Street and Saskatchewan Drive to Queen Elizabeth Park Road. The proposed trail is shown in Image 1.

The trail will be a 3-metre-wide asphalt surfaced trail, and will climb the south valley slope with a number of switchbacks terminating at the east of the Laurence Decore Lookout on Saskatchewan Drive. A number of low retaining walls will be required to retain cut slopes along the trail alignment. A small park shelter will be constructed at the southwest corner of the former swimming pool site.

The tender for QEP1 project was issued on October 22, 2014 and closed on November 6, 2014. On December 10, 2014 the Outline Agreement was issued to Contractor A. The Agreement indicated that construction had to be complete by August 30, 2015. It had a maintenance/warranty completion date of August 30, 2016.

Image 1: Upper Queen Elizabeth Park – Phase 1



- 1 West portion of the project, including connection of upper trail to lower trail.
- 2 East portion of project, including lower multi-use trail
- 3 Upper trails with switchbacks and retaining walls

3. Objectives, Scope, and Methodology

In January 2016, a City of Edmonton employee contacted the OCA to share a number of concerns related to the QEP1 project:

1. The procurement process and the qualifications of Contractor A.
2. The sharing of land surveying information with Contractor A by City of Edmonton.
3. The lack of support for an amount claimed by Contractor A on an invoice.
4. The questionable quality of the lower asphalt trail.

The objective of our review was to evaluate and assess the risk to the City of Edmonton and to the QEP1 project in relation to these four concerns.

The OCA conducted a number of interviews with City of Edmonton staff in the Landscape Design and Construction business section¹, and the Engineering Services business section². We also conducted interviews with external stakeholders. In addition, we reviewed project documentation, invoices, and e-mail correspondence to substantiate or refute the concerns. Finally, we conducted two site visits of QEP1.

¹ Facility and Landscape Infrastructure Branch, Integrated Infrastructure Services Department

² Transportation Operations Branch, City Operations Department

4. Observations

We have summarized our observations and conclusions for each of the four areas of risk:

1. Procurement process and contractor qualifications
2. Land surveying information
3. Progress payments
4. Quality of the asphalt trail

4.1. Procurement Process and Contractor Qualifications

The City of Edmonton employee had expressed concerns regarding the tendering process and the ability of the selected contractor to successfully complete the project.

We reviewed the procurement process and made the following observations.

The QEP1 project was an open tender and two responses were received. One of these responses was disqualified. This left only one qualified bidder, Contractor A, who was awarded the contract on December 11, 2014.

We reviewed the evaluation criteria for the QEP1 tender and observed that it originally included a requirement for prequalification under the tender for the Landscape Prequalification 2012-2016. Under such a requirement, prospective bidders have to be screened based on their capability to perform a specific category of work. The requirement for prequalification is intended to mitigate the risk of having unqualified bidders. By including a prequalification process, Project Managers can be assured that only bidders that have demonstrated capability in performing work of this type can submit pricing. A prequalification process generally includes evaluating past experience, references, management structure, staff training / certifications, equipment list, professional affiliations.

We were informed by CPSS that the prequalification requirement for the QEP1 project was an administrative error and that this tender was intended for all interested parties. Through an addendum to the tender documents issued immediately following release, the prequalification requirement was removed. The tender evaluation and award criteria were not further adjusted. The QEP1 tender was now being awarded solely on price. As a result, the City conducted no reference, qualifications, or past experience checks.

A recommendation document was signed by the Project Manager to award to Contractor A. This document also lists a 15% contingency and indicated that none of the optional items, valued at \$268K, were to be awarded to Contractor A.

We reviewed the prequalification form of Contractor A submitted under the tender for the Landscape Prequalification 2012-2016. Contractor A had completed projects for the

City before; however no comparable projects of this scale. Contractor A was prequalified for specific types of landscape construction projects including hard and soft landscaping, to a maximum dollar value set for each type of project. If the prequalification requirement had not been removed from the QEP1 tender, Contractor A would have been disqualified for the QEP1 project due to the size of the project.

Management indicated that Contractor A had not been qualified or disqualified for this type of project previously.

We were informed by CPSS, that the City issues price based tenders for lower risk projects (many roads tenders use that approach). In these cases, the City relies on performance bonding requirements and Certificate of Recognition (COR)³ to mitigate contractor performance risks. To provide assurance that bidders have the capacity and are actively engaged in that type of work, the City relies on the surety companies (who underwrite the bonds) to have rigorous diligence processes before they will underwrite bonds. As well, the tender specifications in this tender were prescriptive, providing the City with contractual remedies in the event the contractor does not meet defined performance or quality standards (see Section 4.4. regarding the quality of the asphalt trail). We observed that a performance bond was provided by Contractor A. The bond was in the amount of 50% of the contract price.

Based on these observations, we conclude that there were grounds for the employee's concerns. However, as per CPSS, the City's risk exposure was mitigated by the performance bonding, COR requirements and the contractual protections in place. Furthermore, CPSS has indicated that since the tender for QEP1, the risk of this type of procurement process issue occurring again has been mitigated. New guidelines for Tender/RFP evaluation processes were issued in January 2015.

4.2. Land Surveying Information

The City of Edmonton employee expressed a concern about liabilities that could arise from allowing Contractor A to use City of Edmonton Land Surveying data instead of relying on surveys prepared by the Contractor's own surveyors.

We reviewed the circumstances related to sharing of land surveying data that was created by City's Landscape Design and Construction surveying team for the QEP1 project. Sharing of this particular data is not common practice, due to the City's potential responsibility if the data is used improperly, or there are errors in the transfer of the data.

³ A Certificate of Recognition (COR) is awarded to businesses who develop health and safety programs that meet established standards. A COR shows that the business' health and safety management system has been evaluated by a certified auditor and meets provincial standards. These standards are established by Occupational Health and Safety (OHS).

The General Supervisor weighed the risks of not sharing the data, such as possible further construction delay and misalignment of retaining walls, against the risk of sharing the data. The General Supervisor decided to share the data, after receiving emailed confirmation from Contractor A that Contractor A would assume all risks resulting from the use of the City's survey data.

As such, we conclude that risk mitigation actions were taken in this situation. However, it would have been preferable if legal advice on appropriate documentation of the Contractor's assumption of the risks had been obtained prior to proceeding with sharing of the information.

4.3. Progress Payments

The City of Edmonton employee expressed concerns about an amount claimed by Contractor A on an invoice.

We reviewed the relevant invoice, supporting documentation, and management activities. We found that there was an unsupported claim by the contractor for payment of \$183,180. Payment was appropriately denied by the City. A partial payment of the claim of \$51,000 was later approved based on land surveying conducted by the City of Edmonton. The remaining amount is still under consideration based on submission of supporting documentation from the contractor.

During the review of all paid invoices, we observed an error that resulted in an overpayment of approximately \$12,359. We notified the current Project Manager, who has since corrected the oversight.

As such, we conclude that the risk of unsupported claims has been appropriately handled by the business area. We continue to stress the importance of ensuring that each line-item on invoices is supported and assessed for validity, accuracy and compliance.

4.4. Quality of the Asphalt Trail

The City of Edmonton employee expressed a concern that the quality of an asphalt trail constructed by the contractor did not meet the City's standards, but was being accepted by the City.

We reviewed the City's asphalt quality requirements, testing procedures, and the applicable test results.

Both density and thickness quality assurance tests are done on asphalt to ensure that it will perform as anticipated. One factor that affects the long-term durability of asphalt is

the density of the asphalt mix, also called compaction that is achieved at the time of construction. Thickness deficiencies can be addressed by adding an overlay. Density deficiencies on the other hand cannot be fixed. Typical remedies for a lack of density include assessing a penalty on the contractor to compensate the City for the loss of expected lifespan. If the deficiencies are above a predefined threshold; the asphalt will need to be removed and replaced.

The City has asphalt testing procedures. These procedures help to support an objective, transparent testing process. The results of quality assurance asphalt testing are intended to provide a representative sample of the material and workmanship being provided by the Contractor to the City. These results are generally considered to be performed at locations selected by the Quality Assurance technician to provide representative data. These procedures indicate that a minimum of one asphalt test for density and thickness should be performed per 1,000m², in a location where a sample of asphalt material was previously taken.

The concerns brought forward are centered on the lower asphalt trail; a 200 meter multi-use trail from Queen Elizabeth road to the existing trail connection. For this section of trail, the required density and thickness test was completed. The sample passed the density testing, but did not pass the thickness testing.

The previous Project Manager identified visible indications of density issues along the length of trail despite the positive test result. The Project Manager requested seven additional tests, then nine more, for a total of seventeen tests. These were performed by the City's Engineering Services at various locations along the trail identified by the Project Manager. Of these 17 tests, only one - the first one - passed the density testing and only three passed on thickness.

The contractor contested the results on the basis that the Project Manager did not follow the documented City procedures for choosing locations for additional testing. After collecting and reviewing applicable information, the General Supervisor concluded that the additional test results should not be used in the assessment of the quality of the work. The original test location was used to assess the quality of the 200m of trail. This resulted in a 3% pay penalty for the contractor on the asphalt trail surfacing.

The OCA reviewed the testing standards and spoke with Engineering Services on testing practices. We were unable to find information suggesting that the Project Manager's decision to direct the location of additional testing was appropriate or inappropriate. Additionally, the locations included in the additional testing appear to be reasonably spaced along the length of trail, with variation in left, right and middle of trail. By disregarding the additional test results, the City has paid for a 200m asphalt trail that does not meet the City's construction specifications. Both Engineering Services (responsible for the quality assurance process) and an external consultant have expressed concerns to the OCA that the 3% pay penalty is not sufficient to compensate the City for the quality of the work delivered.

The OCA visited the site and, as shown in Images 2 to 5, we observed cracks as well as crumbling asphalt in the lower asphalt trail. This was its condition after one winter season.



We conclude that there is merit to the employee’s concerns related to the quality of the lower asphalt trail. By disregarding additional failing test results due to an alleged deviation of documented testing procedures and practices, and paying for the asphalt trail, the City is at risk of accepting potentially sub-standard work.

As the project is still in progress and not concluded, we were informed that the City does still have recourse through the Construction Completion Certificate and the Final

Acceptance Certificate processes. As such, the risk could be mitigated by reviewing all previous tests results and inspections conducted as part of the Construction Completion Certificate process and determine an appropriate course of action to ensure the City receives a multi-use trail that is in conformance with City Design and Construction Standards.

Recommendation 1 – Construction Completion Certificate process

We recommend that the City, as part of the Construction Completion Certificate process, reviews all previous tests results and inspections conducted to determine the appropriate course of action to ensure the City receives a multi-use trail that is in conformance with City Design and Construction Standards.

Management Response and Action Plan

Accepted

Comments:

Administration has reviewed the report and accepts the recommendation provided by the Auditor. We are currently in the process of assessing the information and determining the best course of action to address the quality concerns in order to reduce the risk to the City.

Planned Implementation Date: August 31, 2016

Responsible Party: Director – Landscape Design & Construction, Facility & Landscape Infrastructure, Integrated Infrastructure Services.

4.5. Contract Status Review

Finally, we also assessed the status of this contract in relation to its budget, schedule, and quality.

Budget

The construction contract is expected to exceed its original award of \$1,380,000 by approximately \$490,000 (35%). The increase in cost is based on contemplated change orders. Most change orders are related to unforeseen issues that surfaced during construction. For example, during construction, a foundation wall of a former brewery was discovered and had to be removed.

The anticipated increase in the cost of construction has not been updated in the City's financial system and does not include other costs incurred for this project, such as project management costs, consultant fees, cost for services provided by other City Departments, etc.

Schedule

The Outline Agreement with Contractor A indicated that construction had to be complete by August 30, 2015, with a maintenance/warranty completion date of August 30, 2016.

A site visit by OCA on February 5, 2016 confirmed that the work is not close to completion. The total contract amount is estimated to be approximately \$1.9 million. Payment to the contractor is tied to the progress of construction. By February 2016, only 20% of the expected contract amount had been paid. The contract has no provision for the recovery of site occupancy costs from the contractor as a result of project completion delays. The current Project Manager has indicated that construction is expected to be completed by the end of July 2016.

Quality

As indicated, there are concerns about the quality of the asphalt trails constructed to date. Testing for the upper trail failed on density and thickness testing. The City has instructed the contractor to replace it. As of March 2016, the upper trail was not yet replaced as the 2016 construction season had not started up yet. The quality of the lower multi-use trail is contentious as discussed in Section 4.4.

We cannot conclude on the final quality of the overall project as the project is not yet completed.

5. Conclusion

Based on our review, we conclude that three of the four risks communicated to the OCA were appropriately managed, or that these risks were subsequently mitigated by Administration.

The risk related to the quality of the lower asphalt trail was not appropriately managed. This has resulted in the City paying for the construction of a multi-use trail that may not reach its expected lifespan.

We recommended that the City, as part of the Construction Completion Certificate process, reviews all previous tests results and inspections conducted to determine the appropriate course of action to ensure the City receives a multi-use trail that is in conformance with City Design and Construction Standards.

Finally, we assessed the overall status of the contract to date. We found it is over-budget, delayed, and at risk of not meeting the City's quality standards. A number of additional factors have contributed to this current situation included the discovery of foundation wall of a former brewery that had to be removed. We are aware that the current Project Manager and the General Supervisor are continuing to work with the contractor to mitigate ongoing risk issues that have adversely affected the project performance to ensure a positive outcome of the project by the end of July 2016.

We thank staff and management in the Landscape Design and Construction business section (Facility and Landscape Infrastructure Branch, Integrated Infrastructure Services Department) and the Engineering Services business section (Transportation Operations Branch, City Operations Department) for their assistance during this review.