

**CITY OF VAUGHAN**

**EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 25, 2013**

Item 20, Report No. 32, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on June 25, 2013.

**20                    IMPLEMENTATION OF RECOMMENDATIONS FROM CITY HALL AUDIT**

**The Committee of the Whole recommends approval of the recommendation contained in the following report of the Interim City Manager, dated June 18, 2013:**

**Recommendation**

The Interim City Manager in consultation with the Commissioner of Community Services and the Commissioner of Legal and Administrative Services/City Solicitor recommend:

- 1)        That this report be received for information.

**Contribution to Sustainability**

Capital projects make up a substantial portion of the City's overall budget. Given the volume, duration and magnitude of capital projects, it is important for the City to ensure capital projects are delivered in the manner and timeframe intended to sustain the City's operations and services. The implementation of the City Hall Construction Audit Process and Procedure recommendations will assist the City by improving capital project reporting, risk assessment and measuring and forecasting against projected timelines and available budgets.

**Economic Impact**

There are no economic impacts associated with this report, although it is anticipated that the implementation of the City Hall Construction Audit recommendations will assist with more accurate recognition of potential costs, through contingency funding assigned based on expected risk, and enhanced reporting of high profile capital projects. Staff intend to explore project management software and the associated cost as a tool to enhance future capital project management, and may include a request for funding in the 2014 budget process.

In addition, providing project management and/or cost consultant expertise into future capital projects is a priority, and will require additional financial resources in upcoming budgets, either as additional staffing or external resources for specific projects.

**Communications Plan**

The *Vaughan City Hall Construction Audit Report* and presentation prepared by Commercial Cost Control, Inc., are available in an electronic PDF format on the [City's website](#). Corporate Communications will be issuing a media release to highlight the City's implementation of the audit recommendations.

**Purpose**

The purpose of this report is to provide an update on the status of the implementation of the recommendations from the City Hall Construction Audit prepared by Commercial Cost Control Inc. at the Council Meeting of July 2, 2011.

**Background - Analysis and Options**

On July 6, 2011, Council received an audit report and presentation from Commercial Cost Control Inc. dealing with the construction of the new City Hall which included a number of observations for processes and procedures, as well as six recommendations with assessed priority levels (low

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### EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 25, 2013

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to high) for further improvements. One recommendation is a high level priority, four are medium priority levels and one is a low level priority. The responses from the City of Vaughan included in the report were, in all 6 cases, in agreement with the recommendations, as staff saw opportunities for improvement by implementing each recommendation.

The following are the Observations for Processes and Procedures included in the audit report (beginning on page 36 of the Construction Audit report) , and their current implementation status:

#### **1 Bid Analysis**

##### ***Priority Level: Medium***

***Recommendation:*** While the City did employ a proactive approach in recruiting CM2R to provide project estimates, the City should use some standards for evaluating bids when they are received. While there is no industry accepted value to use, a range between estimates of 21% may be high. For future projects of significant value, the City should evaluate the range and then determine what questions to ask when the range is exceeded.

*Although three bids do provide some level of judgment for the accuracy of the estimates, it is on the lower side of what should be considered acceptable for a project of this size. Although it is understood that there may have been specific economical situations that may have prevented other firms from bidding the project, the lower number of bids and the spread in the overall pricing should have resulted in a more in depth evaluation of the pricing.*

*While the prequalification process may have been efficient in eliminating submissions from contractors that were not qualified, which would have further skewed the data, the fact remains that there was a large spread between the bids received. The conclusions and recommendations DO NOT suggest that Maystar was not the lowest qualified and responsive bidder. Rather, they reflect that additional analysis may have led to the conclusion the initial budget may have been undervalued.*

##### ***Response from the City of Vaughan:***

*Management agrees. Staff will research practices regarding bid review evaluations to establish guidelines to incorporate into the City's documented bid evaluation processes. Currently, purchasing staff identify and discuss bid results that reflect a broad range of pricing with their internal clients, but this practice is not formalized into the bid evaluation process.*

##### **Status Update**

A revised Purchasing Policy was recently approved by Council and the accompanying procedures and guidelines are also now being finalized based on the new policy. Staff have drafted a procedure relating to bid analysis and are examining bid results for bid spreads that indicate some risk. When there is a concern with a large spread between the lowest bidder and other bidders, purchasing staff and the departmental subject matter experts meet with the lowest bidder under these circumstances to ensure they understand the scope of work and are able to complete the project as stipulated, and or that the bid price is correctly calculated. In one recent instance, a proponent withdrew their bid based on this inquiry from purchasing staff, when it was discovered the bid price was incorrect and understated. In the event that the bidder confirms their understanding of the scope of the work and their pricing, a higher contingency may be assigned to the project in recognition of potential risk. The results of this process are documented on file.

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**2 Contingency Factoring**

**Priority Level: Medium**

**Recommendations:** *There are two major factors that can influence the project execution process that should be considered when evaluating a project and types of exposure that create a potential for additional cost exposure.*

*1) It is likely that the needs and requirements of the project will evolve from the base inception up to (and sometimes beyond) the time that the physical construction begins.*

*2) It is improbable that every design requirement, condition and potential risk can be distinctly identified and planned for.*

*In the case of this particular project, the design of the building was more aggressive in comparison to other projects that the City had performed in the past, particularly with the inclusion of the desire to achieve LEED Gold certification.*

*It is known that an owner has the ability to influence a project during the earlier stages of the project design and inception. The potential cost impact of these two items diminishes as the project progresses through design and into construction.*

*This concept is often easier to understand as shown in the following illustration.*

*Also, the table above is meant to only be applied directly to construction and assume a minimum of 90% drawings. In addition to the contingency put on the construction estimate, many owners will add additional project wide contingencies as follows:*

- *Escalation factors for projects that have potential multi-year construction durations to absorb fluctuations and inflation in the economy.*
- *Total project contingency of at least 5% to the total value of the entire project. In organizational cultures where change is likely, 10% or 15% may be appropriate.*

*Owners often want to cut contingency with the intent of having a lean project. This action is short sighted as nearly every project experiences change.*

**Response from the City of Vaughan:**

*Management agrees with the recommendation. Vaughan will continue to investigate ways to better phase projects from concept to strategic planning and implementation. In addition, staff will investigate better methods to manage risks through identification of early triggers so that issues can be escalated sooner.*

*While proper planning and risk identification can reduce change, “it is improbable that every design requirement and potential for risk be distinctly identified and planned for” in a project.*

*Contingencies are necessary and required as nearly every project experiences change for a variety of reasons as identified in this report. Staff will implement procedures/tools to determine realistic contingencies when developing project budget estimates.*

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### EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 25, 2013

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#### **Status Update**

Based on industry research, a contingency matrix has been developed that evaluates the risk of capital projects, and determines an estimated contingency based on the risk elements of the project. The matrix is included in a new policy “Capital Project Financial Control Policy” which was provided to the Finance and Administration Committee of June 10, 2013. Determining the risk associated with the various projects was discussed with departments as 2013 to 2016 capital budgets were being prepared. As a result, contingencies are now incorporated into several capital projects included in the 2013 capital budget discussions. In addition, reports coming forward to committee for tender award commonly include a requested contingency level.

#### **3 Regular reporting of the project**

**Priority Level:** Medium

**Recommendations:** Deficient reporting requirements are common among organizations that do not perform significant construction on a regular basis. Many organizations have great success with projects without having stringent guidelines. It is not until projects have significant deviations that many organizations start to consider the value of structure reporting and analysis.

On larger projects the City should develop some level of monthly reporting that provides a highlighted view of where the project is and where it is headed. Such items that are important on these types of monthly reports are a snapshot such as

- ☐ Cashflow Summary
- ☐ Changes
- ☐ Project cost trending
- ☐ Summary and Critical Path Schedule updates
- ☐ Project Metrics (Earned Value, Schedule Performance, Cost Performance, etc.)
- ☐ Upcoming issues.

This level of reporting that should be required may come from a compilation of information from the Contractor and Architect. Groups such as AACEI, PMI and CFMA have published numerous articles about reporting techniques. Alternatively, there are many “off the shelf” software packages that provide reporting standards.

#### **Response from the City of Vaughan:**

Management agrees with the recommendation that a project of this scope requires additional reporting. Staff will investigate using Project Management templates and tools available for construction projects. In addition, staff will investigate utilizing specialty consultants to provide trending forecasts for larger projects.

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### EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 25, 2013

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#### **Status Update**

Staff provided a new draft policy, the “Capital Project Financial Control Policy” to the Finance and Administration Committee on June 10, 2013. This policy addresses a number of aspects of capital project financial control, but specifically mandates how and to what level of detail capital projects of high value or greater risk must be reported. The policy includes a template for reporting these high profile projects, and includes in addition to normal “actual” spending to date variances, details such as risk and issue status, change order tracking, project schedule performance, and in-process and forecasted costs. Subject to Council comments and a final staff review, the draft policy will be coming to Council in September 2013 for final approval, in time for use on upcoming major projects such as the Civic Centre Resource Library, the North Thornhill Library and the North Maple Park. This enhanced reporting for high profile projects will be included on the quarterly reports to Council examining operating and capital budget variances.

In addition, the format for quarterly reporting of standard capital projects has also been enhanced, beginning with the first quarter 2013, to illustrate estimated project completion date, and percentage of completion as well as normal budget to actual variances. In researching municipal best practices for detailed reporting of capital projects, staff did not come across any examples as detailed as the enhanced level of reporting in the new policy.

#### **4 Cash Flow**

**Priority Level:** Low

**Recommendation:** *It is recommended that the City begin to evaluate and understand the process of cash flow analysis. This tactic becomes extremely important for larger capital projects (>\$10MM). The Cash Flow analysis should be broken down to the deepest level of granularity possible and updated on a monthly basis over the life of the project. In some cases, weekly updates may be beneficial, although it must be understood that they may take significantly more time to keep up to date and may not provide any greater benefit than monthly reviews. However, the City may have to review their additional levels of reporting on a project by project basis. By breaking out individual purchase orders or specific allowances, this method can be a good tool to validate the confidence in a given forecast. It is important that cash flow costs are projected when they will hit the accounting system and not when the physical checks are released.*

*Appendix I shows an example of cash flow projections broken down by Work Breakdown Structure (“WBS”). Some owner project managers will push a portion of the cash flow responsibility down to their GCs. Ultimately, Accounts Payable is only interested in the bottom line. The detail, however, is the key to accurately predicting the values.*

#### **Response from the City of Vaughan:**

*Management agrees with this recommendation. It should be noted that in the municipal sector full project funding (and resulting cash flow) is typically committed at the project approval stage. Management agrees, however, that a cash flow analysis comparing projected to actual cash flows prepared by a GC or project cost consultant, who has full access to contemplated change orders for a project, would be a useful tool in forecasting the final project cost.*

#### **Status Update**

As noted previously, for high profile capital projects that meet certain risk profile enhanced reporting will be required which will illustrate both project schedule performance variances and earned value variances to actual. With the additional tracking of change orders against approved contingency amounts, any cash flow variances will be apparent. This information would be included in the quarterly reporting for these projects.

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#### **5 Change orders signing and COP**

**Priority Level:** High

**Recommendation:** *The Change Order process in place requires the signature of the Architect, two City Facilities members and the Contractor. This process should be followed and therefore, no change orders that do not include all the proper signatures should be included as part of the COP.*

*Both the Facilities group and the Architect indicated that they were overwhelmed with the volume of changes and therefore were having trouble keeping up. This scenario should be a flag that there may be major design issues or resource constraints on the project. In either case, it is prudent to evaluate the conditions that are hindering the ability to follow the change order process.*

**Response from the City of Vaughan:**

*Management agrees with the recommendation. The Change Order process is well documented and any deviation from the formal process was due to Architect resources being overwhelmed by the number of changes and the extensive payment review process. The work progressed in an effort to keep the project moving and the general contractor and his subs had to be paid. All work was validated and certified prior to invoices being paid. Staff also agrees that projects of this size and magnitude, adding specific resources in the contract to manage Change Orders would be beneficial.*

**Status Update**

The Change order process is well documented in the contract documents. A process to better track RFI's and change orders has been implemented in Community Services (Vellore Village Expansion). This process is being further documented, i.e. in the Contract Documents and Supplementary Conditions to reinforce the City's ability to evaluate and correct issues hindering the proper flow of Change orders and resolution of RFIs. This section will also include the timing of resolving RFIs. All RFIs should be communicated at the site meetings and tracked to ensure they are resolved. This will also ensure an accurate tracking and management of change orders.

#### **6 Institutional Memory**

**Priority Level:** Medium

**Recommendations:** *The City should consider capturing both the findings from this audit as well as the positive proactive processes used as part of a lessons learned document. These can be used for future projects and shared with other divisions of the City that engages in construction activities. In addition, this data can be considered for potential enhancements to the City's process and procedure documents. For projects of this size, the City should also address policies and approval limitations.*

**Response from the City of Vaughan:**

*Management agrees with the recommendation.*

**Status Update**

The findings from this audit have been taken into account in the revisions to the Consolidated Purchasing Policy and the associated procedures. The information has also been very helpful in developing a risk matrix for projects, which in turn is used to assess contingency requirements. The new Capital Project Financial Control Policy incorporates the contingency matrix and enhanced capital project reporting into one consolidated policy, along with other key aspects of capital project oversight, to ensure fulsome and timely reporting of capital projects.

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**Additional Comments from City of Vaughan Staff**

Over the next year as major projects begin to get underway, project management and/or cost consultant expertise must be considered as key elements in proactive project oversight. These resources could be provided by either a staff team, which would require additional staff positions and operating budget funding, or additional consulting costs for specific projects. Options will be reviewed in preparation for the 2014 budget process.

**Relationship to Vaughan Vision 2020/Strategic Plan**

In consideration of the strategic priorities related to Vaughan Vision 2020:

**STRATEGIC GOAL**

Organizational Excellence – Ensure a High Performing Organization.

**Regional Implications**

Not applicable.

**Conclusion**

The implementation of the City Hall Construction Audit recommendations have been completed with the Capital Project Financial Control Policy, which, subject to Council comments, will receive final approval in the fall of 2013. Staff will continue to examine opportunities for improvement as the new policy and reporting formats are implemented with upcoming major projects, such as the Civic Centre Resource Library, the North Thornhill Library and the North Maple Park in the next 12 months.

**Attachments**

N/A

**Report prepared by:**

Barbara Cribbett  
Interim City Manager

## **COMMITTEE OF THE WHOLE – JUNE 18, 2013**

### **IMPLEMENTATION OF RECOMMENDATIONS FROM CITY HALL AUDIT**

#### **Recommendation**

The Interim City Manager in consultation with the Commissioner of Community Services and the Commissioner of Legal and Administrative Services/City Solicitor recommend:

- 1) That this report be received for information.

#### **Contribution to Sustainability**

Capital projects make up a substantial portion of the City's overall budget. Given the volume, duration and magnitude of capital projects, it is important for the City to ensure capital projects are delivered in the manner and timeframe intended to sustain the City's operations and services. The implementation of the City Hall Construction Audit Process and Procedure recommendations will assist the City by improving capital project reporting, risk assessment and measuring and forecasting against projected timelines and available budgets.

#### **Economic Impact**

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**Priority Level: Medium**

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**Response from the City of Vaughan:**

*Management agrees. Staff will research practices regarding bid review evaluations to establish guidelines to incorporate into the City's documented bid evaluation processes. Currently, purchasing staff identify and discuss bid results that reflect a broad range of pricing with their internal clients, but this practice is not formalized into the bid evaluation process.*

**Status Update**

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1) *It is likely that the needs and requirements of the project will evolve from the base inception up to (and sometimes beyond) the time that the physical construction begins.*

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***Response from the City of Vaughan:***

*Management agrees with the recommendation. Vaughan will continue to investigate ways to better phase projects from concept to strategic planning and implementation. In addition, staff will investigate better methods to manage risks through identification of early triggers so that issues can be escalated sooner.*

*While proper planning and risk identification can reduce change, “it is improbable that every design requirement and potential for risk be distinctly identified and planned for” in a project.*

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**Status Update**

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**3 Regular reporting of the project**

**Priority Level:** Medium

**Recommendations:** Deficient reporting requirements are common among organizations that do not perform significant construction on a regular basis. Many organizations have great success with projects without having stringent guidelines. It is not until projects have significant deviations that many organizations start to consider the value of structure reporting and analysis.

On larger projects the City should develop some level of monthly reporting that provides a highlighted view of where the project is and where it is headed. Such items that are important on these types of monthly reports are a snapshot such as

- ☐ Cashflow Summary
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This level of reporting that should be required may come from a compilation of information from the Contractor and Architect. Groups such as AACEI, PMI and CFMA have published numerous articles about reporting techniques. Alternatively, there are many “off the shelf” software packages that provide reporting standards.

**Response from the City of Vaughan:**

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**Status Update**

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**4 Cash Flow**

**Priority Level:** Low

**Recommendation:** It is recommended that the City begin to evaluate and understand the process of cash flow analysis. This tactic becomes extremely important for larger capital projects (>\$10MM). The Cash Flow analysis should be broken down to the deepest level of granularity possible and updated on a monthly basis over the life of the project. In some cases, weekly

updates may be beneficial, although it must be understood that they may take significantly more time to keep up to date and may not provide any greater benefit than monthly reviews. However, the City may have to review their additional levels of reporting on a project by project basis.

By breaking out individual purchase orders or specific allowances, this method can be a good tool to validate the confidence in a given forecast. It is important that cash flow costs are projected when they will hit the accounting system and not when the physical checks are released.

Appendix I shows an example of cash flow projections broken down by Work Breakdown Structure ("WBS"). Some owner project managers will push a portion of the cash flow responsibility down to their GCs. Ultimately, Accounts Payable is only interested in the bottom line. The detail, however, is the key to accurately predicting the values.

**Response from the City of Vaughan:**

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**Status Update**

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**5 Change orders signing and COP**

**Priority Level:** High

**Recommendation:** The Change Order process in place requires the signature of the Architect, two City Facilities members and the Contractor. This process should be followed and therefore, no change orders that do not include all the proper signatures should be included as part of the COP.

Both the Facilities group and the Architect indicated that they were overwhelmed with the volume of changes and therefore were having trouble keeping up. This scenario should be a flag that there may be major design issues or resource constraints on the project. In either case, it is prudent to evaluate the conditions that are hindering the ability to follow the change order process.

**Response from the City of Vaughan:**

Management agrees with the recommendation. The Change Order process is well documented and any deviation from the formal process was due to Architect resources being overwhelmed by the number of changes and the extensive payment review process. The work progressed in an effort to keep the project moving and the general contractor and his subs had to be paid. All work was validated and certified prior to invoices being paid. Staff also agrees that projects of this size and magnitude, adding specific resources in the contract to manage Change Orders would be beneficial.

**Status Update**

The Change order process is well documented in the contract documents. A process to better track RFI's and change orders has been implemented in Community Services (Vellore Village Expansion). This process is being further documented, i.e. in the Contract Documents and Supplementary Conditions to reinforce the City's ability to evaluate and correct issues hindering the proper flow of Change orders and resolution of RFIs. This section will also include the timing of resolving RFIs. All RFIs should be communicated at the site meetings and tracked to ensure they are resolved. This will also ensure an accurate tracking and management of change orders.

**6 Institutional Memory**

**Priority Level:** Medium

**Recommendations:** *The City should consider capturing both the findings from this audit as well as the positive proactive processes used as part of a lessons learned document. These can be used for future projects and shared with other divisions of the City that engages in construction activities. In addition, this data can be considered for potential enhancements to the City's process and procedure documents. For projects of this size, the City should also address policies and approval limitations.*

**Response from the City of Vaughan:**

*Management agrees with the recommendation.*

**Status Update**

The findings from this audit have been taken into account in the revisions to the Consolidated Purchasing Policy and the associated procedures. The information has also been very helpful in developing a risk matrix for projects, which in turn is used to assess contingency requirements. The new Capital Project Financial Control Policy incorporates the contingency matrix and enhanced capital project reporting into one consolidated policy, along with other key aspects of capital project oversight, to ensure fulsome and timely reporting of capital projects.

**Additional Comments from City of Vaughan Staff**

Over the next year as major projects begin to get underway, project management and/or cost consultant expertise must be considered as key elements in proactive project oversight. These resources could be provided by either a staff team, which would require additional staff positions and operating budget funding, or additional consulting costs for specific projects. Options will be reviewed in preparation for the 2014 budget process.

**Relationship to Vaughan Vision 2020/Strategic Plan**

In consideration of the strategic priorities related to Vaughan Vision 2020:

**STRATEGIC GOAL**

Organizational Excellence – Ensure a High Performing Organization.

**Regional Implications**

Not applicable.

**Conclusion**

The implementation of the City Hall Construction Audit recommendations have been completed with the Capital Project Financial Control Policy, which, subject to Council comments, will receive final approval in the fall of 2013. Staff will continue to examine opportunities for improvement as the new policy and reporting formats are implemented with upcoming major projects, such as the Civic Centre Resource Library, the North Thornhill Library and the North Maple Park in the next 12 months.

**Attachments**

N/A

**Report prepared by:**

Barbara Cribbett  
Interim City Manager

Respectfully submitted,

Barbara Cribbett  
Interim City Manager