

## "Owner Spotlight" - Implementing Value Management at The City of Calgary

by Mushtaq Rabbi, VMP

### Implementing Value Management at The City of Calgary

Calgary, in the Province of Alberta, is the fourth largest municipality in Canada with a metropolitan population of approximately 1.44 million.<sup>[1]</sup> The City is led by a fifteen member elected Council and strives to deliver the highest possible quality of municipal services to citizens. The City of Calgary is a program and project intensive organization. In November 2015, The City published a Value Management (VM) Standard with an accompanying Value Management (VM) Guidance document. These documents became formally operational in February 2016. Every capital infrastructure project at or above C\$25.0 M must undergo one VM study prior to implementation. Projects greater than C\$75.0 M, must undergo two VM studies prior to implementation. The City of Calgary is possibly the first municipality in Canada and amongst select few municipalities in North America to mandate Value Management for capital projects.

#### *Context for Infrastructure Investments*

Over the past decade and a half, Calgary has experienced strong population growth. This is due to a combination of natural population increase, significant immigration, and relocations from other Canadian provinces driven by well-paying direct and indirect oil and gas sector related jobs. Every year for the past sixteen years, 25,000 to 40,000 people have chosen Calgary as their new home.<sup>[2]</sup> As a result of this ongoing growth, the need for capital infrastructure investments has grown rapidly. The City of Calgary's Water Resources and Transportation Infrastructure business units alone currently deliver in excess of C\$500 million in capital projects each year to meet demand. On an increasing number of programs and projects, City of Calgary sponsors, project managers and asset owners have chosen to apply VM, commonly known as Value Engineering or Value Analysis at various times in the project life cycle.

The City of Calgary has identified several business benefits by conducting Value studies. Value Management:

- offers an effective, structured and consistent approach for a business unit to improve value on any project;
- aids in problem solving, and innovation;
- reduces risks, streamlines project schedules and improves stakeholder satisfaction;
- offers payback on investment typically exceeding well beyond 10:1; and
- demonstrates to City Council and The City's senior management that the project team has taken the necessary steps to ensure infrastructure money is being spent responsibly.

At the beginning of 2015, The City of Calgary administered six Infrastructure Investment Plans (IIPs) with a combined estimated capital investment of approximately C\$12.0 billion over the next 5 years.<sup>[3]</sup> On the basis of past experience with VM, City administration recognized that if a formal VM study requirement was introduced, The City could significantly improve investment decisions, clearly align scope and budget, and most likely achieve more projects within the same budgets. It was estimated that potentially C\$700 Million or more of cost

avoidance or cost deferral could be realized as a result of undertaking VM on high-value investments. Specifically, City administration was looking for opportunities to increase the application of VM to programs and projects in nine capital-intensive business units.

## *Calgary's VM Experience*

The earliest VM studies at The City of Calgary were undertaken on water, waste water and transportation infrastructure capital projects. Between 2000 and 2008, The City of Calgary performed seven VM studies. While these seven studies led to successful outcomes, their results were not well documented.

Since 2009, there has been renewed interest in VM, especially within the Water Resources and Transportation Infrastructure business units. In 2011-12 these two business units jointly created and closed a Request for Proposal (RFP) for "Professional Services for Value Analysis" to help alleviate the length of time typically spent by The City to procure Value specialists. Through a competitive process initiated by this RFP, The City shortlisted five qualified companies with six Certified Value Specialists (CVS<sup>®</sup>). These companies were selected to undertake VM service on a rotational basis. With this rotation in place, business units willing to undertake a Value study on a program or a project, would for the first time have easy access to a qualified VM facilitator. The RFP specified requirements for VM services in accordance with the requirements established by SAVE International and Value Analysis Canada. This RFP was an important milestone in promoting and advocating the application of VM on major infrastructure investments.

Between 2009 and 2014, sixteen additional VM studies were undertaken on important projects. The timing and scope of these studies served as "gate" reviews of a variety of capital and operational programs and projects. All VM studies were undertaken in accordance with SAVE International's Value Methodology Standard. All these reviews were conducted as part of an exploratory phase of applying VM at an executive and/or a program/project sponsor's discretion. No corporate or departmental VM standard or guidance or program existed during this time. Results of all these studies were documented and analyzed for senior management.

An analysis of the data from these sixteen (16) VM studies identified the following:

- Avg. VM study cost vs. project estimate: 0.23%
- Avg. Return on Investment (ROI): 130:1 (owner benefit to every C\$ spent on VM study)
- Avg. % of total cost avoidance or capital deferral identified: 12.6%
- Avg. VM study cost: C\$80 K
- Range of projects reviewed: C\$6.0 M to C\$523.0 M (C\$60.0 M median)
- Avg. project capital cost: C\$84.0 M
- Total estimated capital investment (at VM study): C\$1.34 B
- Total cost avoidance (capex & opex) identified: C\$156.0 M
- Total cost of 16 VM studies: C\$1.2 M

As stated earlier, multiple non-financial benefits were also achieved with every VM study. These benefits included: improved or enhanced functional performance, reductions in project implementation timeline, risk reduction, and strengthened program or project team alignment.

The procurement of VM services via the RFP process was complemented by a number of training and learning events for City staff. This was part of a change management strategy.

- In 2009 a one day training session was organized in Water Resources, “Value Engineering for Project Managers”;
- In July 2011, four separate one-day training sessions were held on VM. “Value Analysis in Action”, Ministry of Transportation Ontario’s (MTO) award winning one-day training was jointly organized and presented by Value Analysis Canada and The City of Calgary;
- In November 2011, The City in collaboration with Value Analysis Canada and PMI-SAC (Project Management Institute – Southern Alberta Chapter), organized a dinner event focusing on the application of VM within the Government of Alberta;
- Between 2010 and 2013 City staff also made brief and informative presentations to various business units across the corporation to build a general awareness of VM.

These small events all generated a greater interest in VM and created a favourable environment for hosting the first VM conference in Western Canada. In 2012 The City of Calgary sponsored the Canadian Society of Value Analysis annual conference in Calgary. The conference was attended by 164 participants from Canada, the USA and Europe, including 58 program and project managers from the City of Calgary.

#### *Council’s and Senior Administration’s Interest in VM*

Every infrastructure project is a unique endeavour. Traditionally, capital project delivery can suffer from scope, schedule, and cost overruns that can lead to a high level of stakeholder dissatisfaction. An effective VM approach can mitigate these shortcomings and can lead to much higher levels of satisfaction for all.

In 2011 a City of Calgary Auditor’s report on a major project identified several shortcomings in the planning and execution of this capital infrastructure. The report found,

*...that project management best practices were not always adhered to. This is important given the size (in cost, time and resources) and complexity of this project, and the importance of the Project to the City. Insufficient project planning reduced the effectiveness of project management throughout construction. In particular, the lack of: a) a formally agreed and finalized design, and b) detailed timelines (including critical path, time contingency, and checkpoints), led to a situation of continual change and reactive day to day management of issues. The absence of effective project management added both additional costs and time to the Project.*[\[4\]](#)

In response to this report, The City’s senior administration initiated the development of a “Corporate Project Management Framework” (CPMF), a multiyear program requiring strong internal stakeholder engagement and significant change management activities. A steering committee was established with representation from nine major capital-intensive business units.

Early on in the steering committee’s review, the chair of the committee identified VM as one of the methods that could significantly address the questions and concerns that arose in the audit reports by helping sound decision making in major capital infrastructure investments. The development of the CPMF was led by the Corporate Project and Asset Management (CPAM) division of The City. Between 2012 and 2014, the CPMF program

created and implemented ten standards to provide specific direction on the City's project management practice. The CPMF program also published a Value Management Best Practices Guide in early 2015. VM was not a mandatory requirement at this time.

Further to the CPMF program, in February 2015, Calgary City Council endorsed a motion directing City administration to report on,

*...the current project management practices that the City of Calgary uses for capital construction and present alternatives and a business case that outlines how the City can further enhance project management capabilities;*[\[5\]](#)

The Council motion further stated that this business case should include:

1. *The application of innovative quality and project management approaches, including value management and stage gating,*
2. *The identification of ways to better capture capital construction project savings and increase project efficiency,*
3. *Analysis on how the City could better demonstrate economic benefit and the multipliers of all construction projects,*
4. *Options to reduce capital construction project delivery timelines.*[\[6\]](#)

A report to Council was submitted. With the impressive track record of VM in The City, in September 2015, Calgary City Council passed a motion that directed administration to mandate VM for all capital projects at or above C\$25.0 M. With Council support, City administration directed the CPAM division to develop a VM Standard and an associated VM Guidance document to support sponsors, program and project managers responsible for delivering large capital infrastructure projects. Council's direction and senior administration's recognition of the effectiveness of VM were critical factors in formalizing and implementing VM at The City.

### *Positioning VM Service*

Once Council's direction and top administration's support was in place, CPAM staff members collaborated with representatives from capital business units to create a VM Standard and Guidance. This dedicated small team worked for two months to craft these documents for approval and endorsement by the steering committee. With input from all interested stakeholders, the Standard was published in November 2015. Prior to the release of the VM Standard, in October 2015 CPAM organized several VM presentations in cooperation with Value Analysis Canada for senior and middle management, program managers, sponsors and project managers. The associated VM Guidance document was released in January 2016. These documents became operational on February 01, 2016. Both these documents were created in alignment with SAVE International's Value Methodology Standard and the European Standard of Value Management.

In most public sector organizations VM is not effectively applied by a sponsor or the project team on a consistent basis. Consistent and effective application of VM requires an organized approach, dedicated effort, selection of the right team members for a study, identification of the right VM facilitator and finally, oversight to ensure the independence of the process. In order to provide effective, corporate-wide support, VM coordination

resources have been strategically positioned in the CPAM division, reporting directly to the Deputy City Manager's Office.

## *Future Opportunities*

In conclusion, when undertaken in accordance with SAVE International's Value Methodology Standard and at the appropriate time(s) in the project life-cycle, VM is a proven program and project management tool. Over the last seven decades, numerous organizations and various sectors across the world have achieved extensive business benefits by applying VM.

With VM's demonstrated success within The City of Calgary specifically in the last seven years, senior management believe increasing the use of VM will significantly benefit The City's major portfolios of capital and operational investment programs and projects. Once success with VM has been demonstrated over the next few years, senior management may consider reducing the threshold for mandatory VM studies from the current C\$25.0 M and adopting VM as an even more widely applied business management practice within the organization.

## *About the Author*

Mushtaq Rabbi is an architect, an urban planner and a Value Methodology Practitioner (VMP) certified by SAVE International. He has over 20 years of experience in both private and public sectors. Mushtaq has been with the City of Calgary for 11 years. Currently he is working as a Project Management Consultant with Corporate Project and Asset Management. He is a member of the Board of Value Analysis Canada and involved in promoting, advocating and applying Value Methodology for City's infrastructure investments. He can be reached at [mushtaq.rabbi@calgary.ca](mailto:mushtaq.rabbi@calgary.ca).

[1] Source: *Statistics Canada, February 2016*

[2] Source: *Statistics Canada, City of Calgary, Calgary & Region Economic Outlook 2015-2020, Spring 2015*

[3] Source: *Action Plan 2015-2018, The City of Calgary*

[4] Source: *16 Avenue North Urban Corridor Project Audit, CAO Reference: AR11-02; City Auditor's Office Page ii*

[5] Source: *Notice of Motion NM 2015 February 10- Project Management on City Projects*

[6] Source: *Notice of Motion NM 2015 February 10- Project Management on City Projects*