



The City of Calgary Corporate Project Management Framework

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The City of Calgary Corporate Project Management Value Management Standard

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Purpose

Value methodology is a systematic process used by a multidisciplinary team to improve the value of a project through the analysis of its functions. The purpose of this document is to describe a consistent approach for the application of Value Management to support:

- informed decision making prior to proceeding with a capital investment; and
- Corporate accountability and transparency in The City's investments in capital projects.

Scope

This Standard represents the minimum requirement that must be met to perform and conduct a Value Management review for all applicable capital projects that meet the criteria outlined in the Application of Standard section.



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Standard

- Value Management review document(s) shall be available for access/review in accordance with The City's records management policies.
- The timing of the Value Management review(s) shall be documented in a project's Value Management Plan, in accordance with the Project Plan Standard.
- Each Value Management review shall contain the following mandatory sections and related content:

Section Number	Section Name	Intent of Section
1	Value Management Pre-Review	Project information including: <ul style="list-style-type: none"> ▪ Project name, executive sponsor, project sponsor, project manager ▪ Phase or stage of the project ▪ Function(s) area to be considered in the Value Management review ▪ Estimated cost of project at the time of Value Management review ▪ Name of the Value Management Facilitator ▪ Value Management review team member names and discipline specialty ▪ Date(s) the Value Management review(s) is(are) conducted
2	Value Management Review ('Job Plan' or 'Work Plan')	
	2.1 Information	Identify project context, background, objectives, and constraints
	2.2 Function Analysis	Identify and classify function(s) to be improved, eliminated or created to achieve required project performance
	2.3 Creativity	Generate alternatives around function(s)
	2.4 Evaluation	Select 'Value' alternatives for detailed development
	2.5 Development	Provide details of each of the proposed 'Value' alternatives including, performance, capital, operating and life cycle cost impacts
	2.6 Presentation	Present recommendations of 'Value' alternatives for inclusion and implementation
3	Value Management Post Review	Implementation decision: <ul style="list-style-type: none"> ▪ 'Value' alternative(s) selected, ▪ Rationale for 'Value' alternative(s) rejected



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4	Approvals	Accepted by (with signature): <ul style="list-style-type: none"> ▪ Project Manager ▪ Project Sponsor ▪ Executive Sponsor
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Note: Additional guidance regarding implementation of this Standard is available in the Value Management Guidance document that includes the recommended practice and application of Value Management.

Application of Standard

The Value Management Standard shall apply to a capital project, if:

- Funding has been approved; and,
- It is rated as a 'Level 3' project as defined using the Project Classification Tool; and,
- If total project costs are at or above \$ 25.0 M as identified in a business case, a minimum of one Value Management review shall be conducted, or,
- If total project costs are at or above \$75.0 M as identified in a business case, a minimum of two Value Management reviews shall be conducted.

Note: Refer to the Value Management Guidance Document for recommendations for when to conduct Value Management review(s).

Note: In-scope projects that do not comply with the Value Management Standard shall document this non-compliance decision in the project records. This non-compliance decision shall be signed off by the business unit Director.

Note: For all other funded projects or programs, the Value Management Standard may apply at the discretion of the project sponsor, business unit Director or departmental General Manager.



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Definitions

Function: The intent or purpose that a product, service or process is expected to perform. It is expressed in a two-word phrase containing an active verb and measurable noun.

Function Analysis: The process of defining, classifying and evaluating function.

Total Project Cost: Costs that include administrative, consulting and construction/deployment expenditures.

Value: An expression of the relationship between function and resources where function is measured by the performance requirements of the customer and resources are measured in materials, labour, price, time, etc. required to accomplish that function.

$$\text{Value} \approx \frac{\text{Function}}{\text{Resources}}$$

Value Management: The application of value methodology by an organization to achieve strategic value improvement.

Value Management Facilitator: An individual other than the project manager, project team member, project sponsor or project manager's supervisor. A Value Management Facilitator should demonstrate the following competencies:

- Identify and analyze project functions
- Apply Value Management 'Job Plan' or 'Work Plan' to a project
- Plan, lead and facilitate Value Management workshop sessions with a multidisciplinary team and key stakeholder groups of up to 25 participants
- Facilitate analysis of capital and life cycle costs for a project and 'Value' alternative(s)
- Aid in effective communication to varying levels of management through written reports, presentation and oral feedback

Value Methodology: A systematic process used by a multidisciplinary group of participants in facilitated workshops to improve the value of projects through function analysis.

References

1. Australian Standard Value Management (AS 4183—2007), Standards Australia 2007
2. Value Analysis Canada website (www.scav-csva.org)
3. SAVE International Value Standard and Body of Knowledge, June 2007
4. Value Methodology Standard, SAVE International, USA, March 2015



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Document revision history

Version	Summary of Changes	Document Status	Date Published
1.1	Value Management Standard Draft	Draft	13 November 2015

Information Security Classification (ISC)

ISC Code: Protected

Data Review Date: 5 September 2017

Data Steward: Team Lead, Corporate Project Management Centre

Business Unit: Infrastructure & Information Services



Value Management Guidance

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Purpose

This guidance document supplements The City of Calgary Corporate Project Management **Value Management Standard** document.

This guidance document is for project sponsors and project managers who deliver capital projects for The City of Calgary. It offers leading practice advice on the timing of when a review should be conducted, describes the approach taken to conduct a Value Management review and provides an explanation of the Value Management methodology. A Value Management review enables:

- informed decision-making prior to proceeding with an investment,
- functional performance assessment and/ or enhancement,
- utilization of team innovation skills for organizational benefits,
- identification, selection and evaluation of possible alternative(s) that add value,
- demonstration of Value decisions.

Scope

This guidance document is applicable to all projects that meet the Application of Standard clause included in the Corporate Project Management Value Management Standard. This guidance document provides direction to facilitate a successful output from a Value Management review for a project.



Guidance

Timing of a Value Management Review

Plan and prepare for a Value Management Review

Project managers and project sponsors should collaborate to determine the project phase at which to conduct a Value Management review. A plan shall be developed which includes:

- identification of the function(s) to be reviewed,
- acquisition of internal and external specialists and other resources to conduct the review,
- documents to be collected/developed for the review team participants,
- review session time(s) and facilities, and
- post review evaluations.

Projects realize the most benefit from a Value Management review in the early phases of development when the cost to implement change(s) is less. (See Appendix A) Depending on the function(s) to be reviewed, considerable time may be required to acquire subject specialists to conduct the function analysis. The plan should be completed as early as possible in the project to allow for timely acquisition of appropriate review participants.

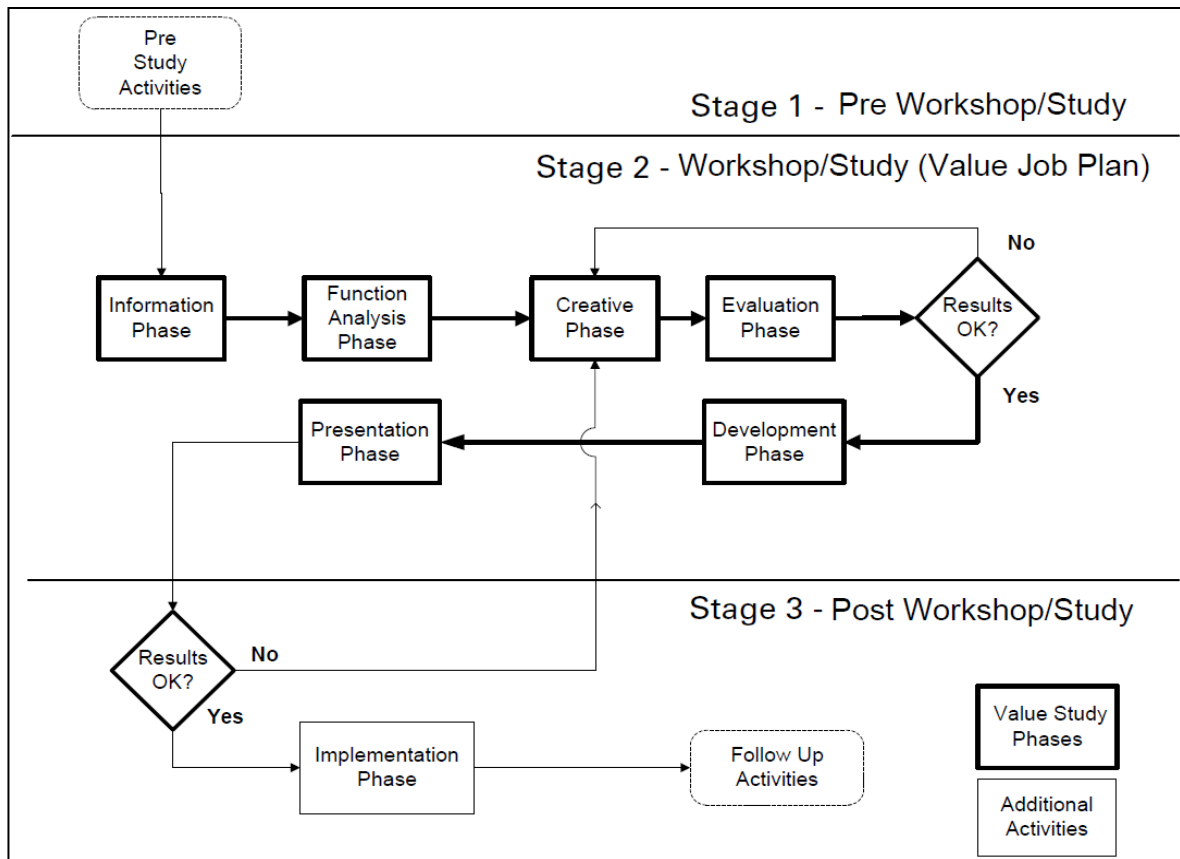
Value Management Review workshop duration

The total time commitment for a Value Management review varies from 20 to 40 workshops hours depending on the nature, complexity, disciplinary requirements and stage of the project when the Value Management review is conducted. The hours of workshop time should be decided in collaboration with the Value Management facilitator, the project sponsor and the project manager. Additional information is available from the Corporate Project Management Centre (CPMC).

Value Management Review Process

The Value Management review process is illustrated in Figure 1 below. The Pre-workshop and Post-workshop components are conducted without the Value Management review team members.

Figure 1 Value Management Review Process Diagram¹



¹ Value Management Standard, SAVE International, March 2015



Value Management Guidance

Value Management Pre-Review

Information about the project and its high-level governance shall be documented as part of the Value Management review report. This includes the project name, as well as the names of the project executive sponsor, project sponsor and project manager.

Phase of the project

The phase of the project shall be identified as a descriptor with a percentage completion of the design or execution of the project. The date of the Value Management review shall be documented.

Function area to be reviewed

Prior to convening a Value Management review team, it is necessary to identify the intent of the review. The project sponsor and project manager shall agree on function area(s) to be analysed for potential Value alternatives. It is important to identify the function area (s) to be reviewed as this will influence the selection of a Value Management facilitator and the composition of the Value Management review team.

The selection of review team members is critical to the success of the Value Management workshop outcomes. The project manager should collaborate with the Value Management facilitator to identify the technical expertise required to complete the review. The Value Management team shall include individuals with areas of technical specialization necessary to conduct the review. The name of the Value Management facilitator and review team members' names and specialization shall be included in the review documentation.

Composition of Value Management Review team

A Value Management review team should include:

- independent disciplinary experts,
- vendor representatives (design consultant or contractor),
- members of The City project team,
- representatives from key stakeholders groups (e.g. Operations & Maintenance personnel), and
- a cost consultant may be included for calculation of capital and operating expenditures (if applicable)

Selection of disciplinary experts should take place in collaboration with the project manager, Value Management facilitator and CPMC if applicable. Additional review team members can be included at the discretion of the project sponsor or project manager in consultation with the Value Management facilitator.



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Value Management Review

‘Job Plan’ or ‘Work Plan’

The Job Plan or Work Plan follows the six sequential steps below:

Job Plan/Work Plan step	Intent of the step
Information	Project context, considerations, objectives and issues are provided to the members of the Value Management review team. During the Information step, the project manager shall gather any materials needed, this may be in collaboration with the Value Management facilitator. Materials should be distributed to the review team prior to the Value Management review workshop sessions.
Function Analysis	Project function(s) are expressed as a two-word phrase using an active verb and measurable noun. The team reviews and analyses function(s) to determine which need improvement, elimination, or creation to meet the project goals and objectives.
Creativity	The Value Management review team members generate new ideas or Value Alternatives around function(s) identified for analysis. All alternatives are documented in the Value Management review report. No evaluation of alternatives occurs at this step in the Job Plan.
Evaluation	The Value Management facilitator analyses the costs and benefits of the Value Alternatives generated in the Creativity step of the Work Plan. The Value Alternatives that best achieve required function(s) are selected for further investigation in the Development step.
Development	Value Alternatives selected in the Evaluation step are elaborated and additional information for the proposed alternative including capital and operating costs is documented. The team develops proposals to a sufficient level to allow decision makers to determine if the alternative should be implemented in the project.
Presentation	The Value Management facilitator provides documented explanation of developed Value Alternatives and their rationale for inclusion into the project. The Value Alternative recommendations are reviewed for inclusion in the project by the project manager, project sponsor and optionally the project executive sponsor.

The Value Management Job Plan or Work Plan described above is approved by Value Analysis Canada, SAVE International, USA and the European Governing Board (EGB) for Value Management.



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Value Management Post-Review

Implementation decision

Value alternative recommendations from the Value Management review that are accepted for implementation into the project are documented. Alternative recommendations that are not accepted for implementation (i.e. exceptions) shall be documented. The decision to not incorporate an alternative shall be reviewed and signed-off by the project sponsor and executive sponsor. Compliance with the Value Management Standard requires the signed decision documentation be retained as part of the project record.

Approvals

Acceptance of Value Management Review

A Value Management review report shall be delivered to the project manager by the Value Management facilitator. The project manager shall review the document in collaboration with the project sponsor. Once the document is determined to be complete and acceptable, it is signed-off by the project manager, project sponsor and optionally the project executive sponsor.

Corporate Project Management Centre Value Management Service

The CPMC maintains a pre-qualified list of Value Management facilitators. Individuals on the pre-qualified list are:

- Certified Value Specialists (CVS) in Value Methodology, accredited by SAVE International,
- Professionals in Value Management (PVM), or
- Trainers in Value Management (TVM), accredited by the European Governing Board for Value Management.

Each of these designations qualifies an individual to facilitate, lead and close a Value Management review.

For additional information on Value Management review services, contact the CPMC at: cpmc@calgary.ca.



Definitions

Corporate Project Management Centre (CPMC): The CPMC is a section of the Corporate Project and Asset Management (CPAM) division of the Infrastructure and Information Services (IIS) business unit, The City of Calgary. The CPMC works with The City’s project management community to develop and sustain corporate excellence in project management.

Function: The intent or purpose that a product, service or process is expected to perform. It is expressed in a two-word phrase containing an active verb and measurable noun.

Function Analysis: A critical and distinct step within a Value Management review that identifies, describes and analyses functions of a program, project, process, product or service, their interrelationships and, where appropriate, the total costs of total resources used. This exercise typically identifies:

- Higher Order Function
- Basic Function
- Required Secondary Functions
- Secondary Functions
- Lower Order Function or Assumed Function

Resources: Money, Time, Manpower, Material, Natural Resource

SAVE International: Formerly known as the Society of American Value Engineers, SAVE International® is the premier international society devoted to advancing and promoting the value methodology. SAVE provides its members with education and training, publications, certification, and recognition. This society was established in 1959. (www.value-eng.org)

European Governing Board (EGB): The EGB is a not for profit organisation, registered in France. It is a European Association of national certification organisations. Its main objectives are to regulate, promote and disseminate the European Value Management Training and Certification System. It was founded following an initiative by the European Council of Ministers to strengthen Europe’s innovative capacity and competitiveness through promotion of the wider application of Value Management. The European Training and Certification System is based upon European Standards in Value Management (EN 1325, EN 12973, EN16271). (valueforeurope.com)

Value: An expression of the relationship between function and resources, where function is measured by the performance requirements of the customer and resources are measured in materials, labour, price, time, etc. required to accomplish that function.

Figure 2 Value Calculation

$$\text{Value} \approx \frac{\text{Function}}{\text{Resources}}$$

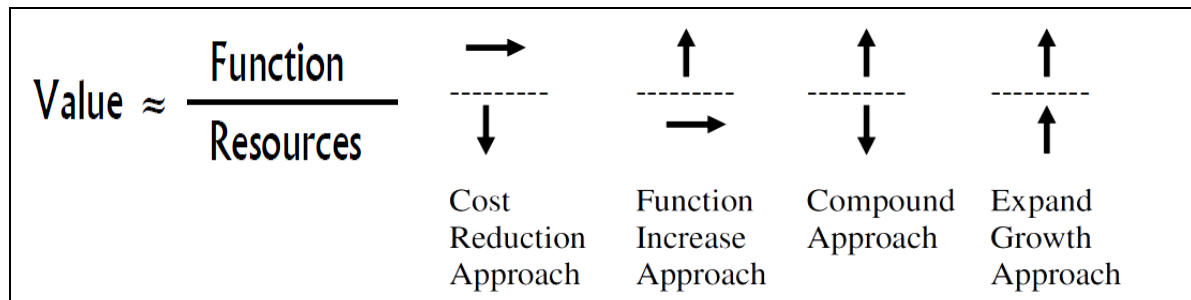
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Value Management: The application of value methodology by an organization to achieve strategic value improvement.

Value Alternative Recommendation: A recommendation of increased value expressed as one of the following approaches:

- Cost Reduction Approach: Maintain existing functions while reduce total resources
- Function Increase Approach: Increase functions and maintain resources
- Compound Approach: Increase functions while reduce resources
- Expand Growth Approach: Significant increase in functions by marginal increase in resources

Figure 3 Value Alternative Recommendations





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References

1. Value Methodology Standard, SAVE International, USA March 2015
2. Investment Life Cycle and Associated Investment Decision Gates, The Office of Government Commerce, The UK, 2008
3. Value Based Team Design Decision-Making, Kirk Associates, 2004
4. California High Speed Train System, Technical Memorandum, Value Engineering Implementation Plan, Parsons Brinckerhoff, 2013
5. Australian Standard Value Management (AS 4183—2007), Standards Australia 2007

Document Revision History

Version	Summary of Changes	Status	Author/Reviewer	Date
V.1.0	Value Management Guidance	Draft	M. Rabbi	25 November 2015
V.1.1	Value Management Guidance	Draft	P.Turnbull	1 February 2016
V.1.2	Value Management Guidance	Draft	P.Turnbull	1 February 2016

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Data Value Management Review Date: 30 September 2016

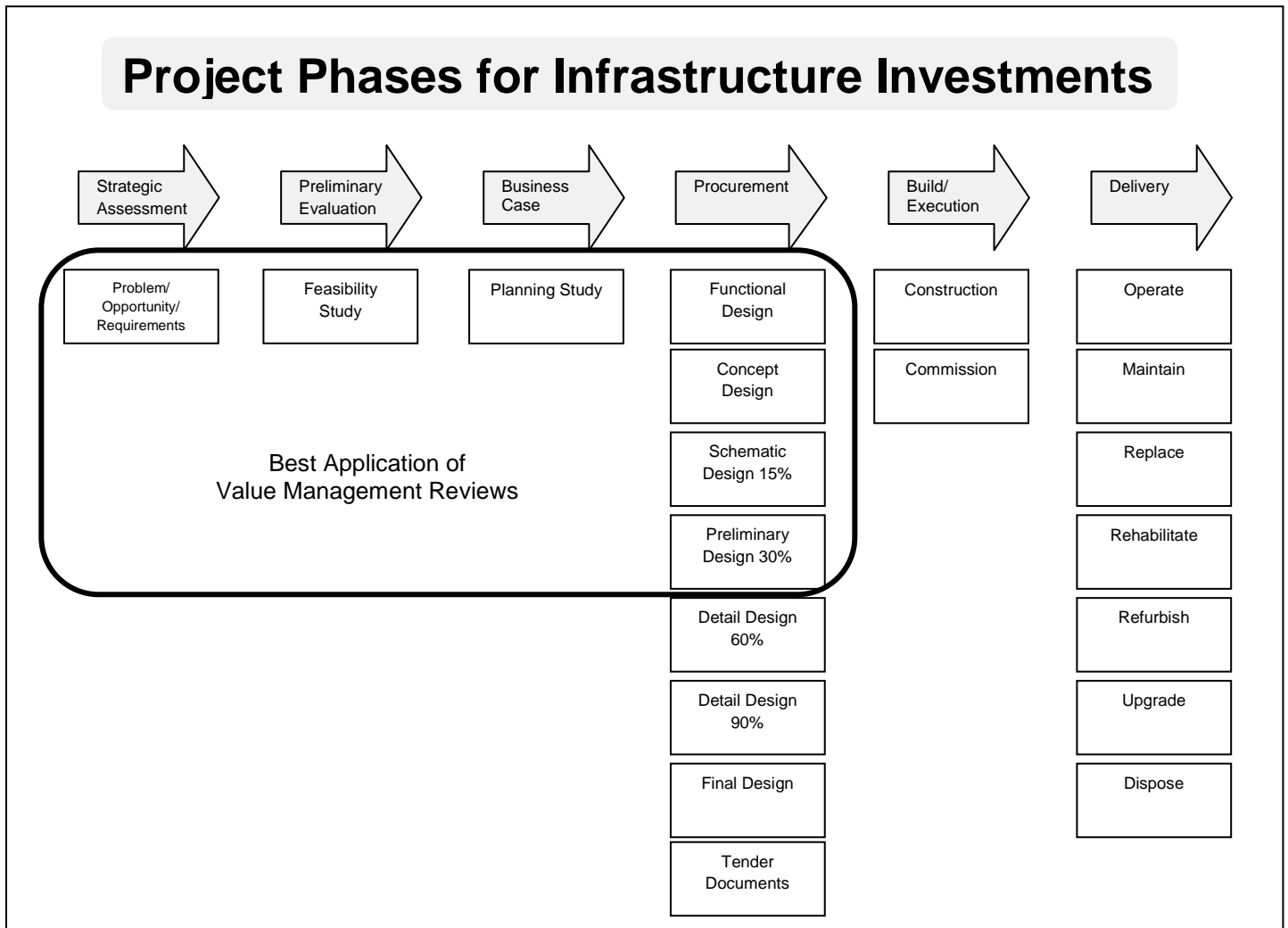
Data Steward: Team Lead, Corporate Project Management Centre

Business Unit: Infrastructure & Information Services

Appendix A – Value Management Review and Project Phase

A Value Management review should occur early in the project identification or initiation phase for the project-sponsoring business unit.

Figure 4 Project Phase and Value Management Review Application²



² Adopted from Investment Life Cycle and Associated Investment Decision Gates, The Office of Government Commerce, The UK, 2008

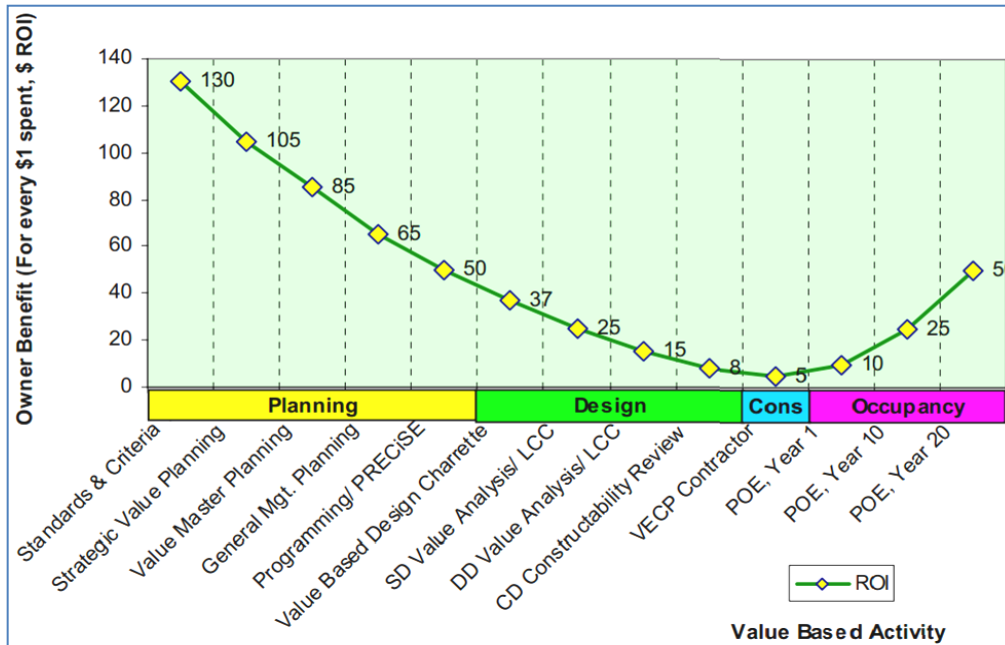


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Figures 5 and 6 below illustrate the increased benefits of undertaking a Value Management review earlier in project development. For a project undertaking a single review, the best return on investment is at the Conceptual Design or Schematic Design phase (15%), prior to the completion of Preliminary Design (30%). At this phase of the project, changes initiated as a result of the Value Management review are less costly to implement and resistance to change(s) is less.

Figure 5 illustrates planning dollars spent in various phases of the design process and their corresponding savings in implementation costs. A return on investment (ROI) in a Value Management review is seen throughout the project but decreases at latter phases.

Figure 5 Value Based Activity and Owner Benefit³

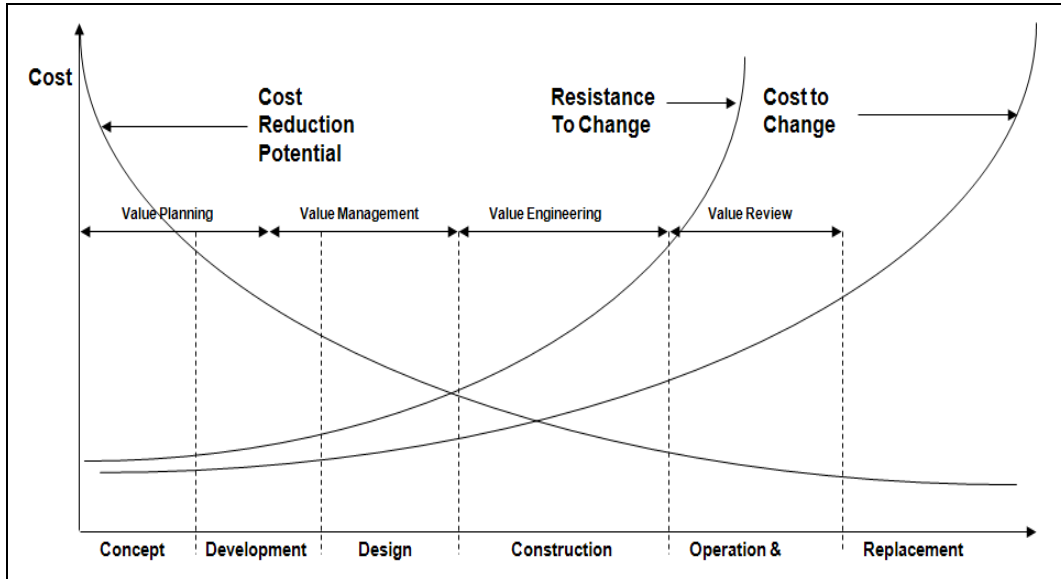


³ Value Based Team Design Decision-Making, Kirk Associates, 2004

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Figure 6 illustrates the cost reduction potential, resistance to change and cost to change as a project proceeds. It is important to note, both resistance to change and costs to implement such changes increase as a project develops. Early application of Value Management in a project is recommended.

Figure 6 Time and Life Costs⁴



⁴ California High Speed Train System, Technical Memorandum, Value Engineering Implementation Plane, Parsons Brinckerhoff, 2013