

1.20 Appendix A

Generic Risk Management Process and Tasks

The Project Manager shall undertake the following generic tasks during each stage of Project Development:

- A. Define the project context
- B. Identify risks
- C. Assess risks (analysis and evaluation)
- D. Manage risks
- E. Review and update on a periodic basis

The risk management process (Tasks A to E) is cyclical. The iterative approach shall increase certainty of outcome through reduction in risk exposure as the project progresses. The objective and details (including responsibilities and outputs) for tasks A to E are described below. Subsequent Sections 3.2 to 3.6 describe their application to the project Stages (Appraisal to Post-Construction).

Task A: Define the Project Context

The purpose of this task is to define the basic parameters within which risks must be identified and evaluated. It provides a sound basis for identifying risks. The key activities undertaken by the project manager and his team (a risk specialist may be appointed by the project manager on larger projects to plan and facilitate a workshop and report the results) are:

- Determine the project scope per the Project Brief
- Determine the project objectives (in view of Project Brief)
- Determine key stakeholders and their requirements
- Determine statutory or regulatory requirements to be addressed
- Determine internal policies or regulations to be followed
- Determine assumptions made in the preparation of the project scope, design or budget e.g. Resource levels or equipment availability made when planning or estimating costs
- Determine constraints e.g. Site conditions, reporting or approvals cycles
- Determine the principal work activities or work breakdown structure
- Determine interfaces - both internal and external to the project and College
- Confirm project sponsor and organisation - roles and responsibilities
- Confirm awareness of risk management processes and responsibilities across the project team.

Deliverables:

- Schedule of project objectives and key success criteria
- Documented project scope and key Tasks
- Schedule of stakeholders and requirements
- Schedule of constraints (including regulatory, policy requirements) affecting the project
- Schedule of assumptions made when preparing project estimates
- Schedule of Interfaces.

Task B: Identify Risks

The purpose of this task is to determine the source and cause of risk events and the impact on the project objectives. This task shall also be used to identify opportunities. The key activities undertaken by the project manager and his team (a risk specialist may be appointed by the Project Manager on larger to plan and facilitate a workshop and report the results) are:

- Identify the anticipated risks in view of the information determined during the earlier Task (defining the context)
- Group the risks according to the nature of their source, cause and impact
- Map the risks to the objectives and project activities to ensure relevance and completeness
- Determine dependency of risks on common causes
- Clarify risk descriptions and seek additional information as appropriate
- Use generic or checklists to ensure completeness.

The Project Manager shall record risk details in a risk log/register/schedule. This shall be maintained as per Task E. The risk log/register/schedule shall capture the information. The Log/register/schedule shall be capable of being used to report and monitor on a periodic basis, risk:

- Status
- Trends
- Treatment and management performance.

Deliverables:

- Record of each risk (including cause, event and consequences)
- Record of supporting details (including source of risk).

Task C: Assess Risks

Task C comprises the ANALYSIS and EVALUATION of risks. The purpose of risk ANALYSIS is to determine the potential impact to the project and College objectives for all identified risks. The areas of risk include:

- Cost
- Time
- Reputation or quality
- H&S/Environmental/sustainability/waste.

Qualitative analysis shall be undertaken by the Project Manager/Team (supported by a risk specialist as appropriate) to determine the relative importance of each risk. Quantitative analysis shall be undertaken subsequently to determine the level of project contingency or to determine the net cost/benefit when deciding management action to mitigate the risk.

Quantitative risk analysis (QRA) shall be undertaken by a risk specialist using appropriate software tools. A probabilistic model of project costs and timescales shall be used to determine the variability of project cost and timescales. Models shall be developed using data obtained through project risk workshops, specialist input, previous project records (e.g. closure reports). The project manager and sponsor should assess the benefit of undertaking QRA, however, the level of benefit is likely to be less for small projects and unlikely to be worthwhile for minor works projects.

Note: quantitative analysis shall only be undertaken when appropriate estimates of likelihood and consequence can be provided.

The results of the risk analysis shall be used to update project contingency costs and schedule (completion dates). Analysis shall be undertaken on a quarterly basis or as follows:

- Cost analysis:
 - pre-design development
 - pre-construction.
- Schedule (completion date) analysis:
 - pre-construction.

The purpose of risk EVALUATION is to determine which risks are highest priority and which require further or less attention. Tolerance levels have been established at project team and

Capital Projects and Planning levels. These are set out in the Probability Impact diagram Table 1.1.

The diagram shows project risks plotted on against the probability and impact scales (highest impact value used). The “RED” risks are above the agreed threshold determined for management reporting purposes and shall be reported to Capital Projects and Planning as part of periodic and Stage reporting. All “RED” risks shall be stated as part of the Evaluation and Approval Procedure.

Impact	H					
	MH					
	M					
	ML					
	L					
		L	ML	M	MH	H

Probability
Probability Impact Diagram Table 1.1

The key activities undertaken by the project manager and his team (a risk specialist may be appointed by the project manager to plan and facilitate a workshop and report the results) are:

- Compare the estimated value of the risk impact in view of the tolerance thresholds (severe risks shall be escalated to the Estates Executive level in order to provide visibility and appropriate resource/funding for treatment)
- Agree which threats shall be
 - accepted (without further treatment) – these insignificant risks shall be retained for monitoring in view of changes in severity during the project
 - acceptable if worthwhile i.e. can be controlled cost effectively
 - unacceptable in any circumstances
 - owned by contracted third parties.
- Agree which opportunities are:
 - Critical – could significantly enhance savings or benefit the College
 - Desirable – facilitate achievement of project objectives (time or cost savings or quality enhancement)
 - Negligible – return on investment is not adequate to justify action (retain for monitoring).
- Undertake further analysis and evaluation as appropriate
- Schedule risks and opportunities which require treatment plans to be prepared.

Deliverables:

- Risk log/register/schedule including risk owners, ranking, severity details and treatment strategies in view of tolerance levels.

Task D: Manage Risks

The purpose of this task is to reduce the severity of threats or facilitate the achievement of opportunities impacting the business.

Different generic strategies shall be considered for managing risks (either as a threat or opportunity) as follows:

1. Eliminate or avoid by changing or abandoning objectives (threats)
2. Change approach in order to contribute to the achievement of the outcome (opportunities)
3. Share or transfer risks to contracted parties (threats)
4. Involve stakeholders who can help facilitate the outcome (opportunities)
5. Reduce the likelihood of occurrence by addressing causes (threats)
6. Enhance the likelihood of occurrence by process improvements or control (opportunities)
7. Develop fall-back plans/provide contingency funds to respond to the threat if it occurs (threats)

The key activities undertaken by the project manager and his team (a risk specialist may be appointed by the project manager to plan and facilitate a workshop and report the results) are:

- Identify Risk Owner (Estates Manager accountable in the event of a risk occurring)
- Identify the manager with budgetary authority to allocate resource to treat a risk (if not the Risk Owner)
- Identify Actionees who are best able to contribute to the completion of the planned treatment
- Determine the actions and timescales to reduce/enhance likelihood of occurrence
- Identify residual risks (those which remain following treatment i.e. risks that the treatment does not work)
- Determine secondary risks arising from treatment plans
- Estimate treatment costs and net benefits of treatment
- Estimate level of contingency (cost of fall back plans)
- Obtain appropriate approval for expenditure
- Agreed mitigation plans shall be included in project schedules/plans
- The effectiveness of the treatment plan shall be reviewed following implementation and consideration given to the consequences of secondary risks.

Deliverables:

- Risk register stating treatment plans including actions, responsibility, completion date, costs and fall-back/contingency.

Task E: Review and Update Risk

Tasks A to D above shall be undertaken on a periodic basis during the project. Typically this shall be monthly as part of project progress reporting and upon completion of project stages. The register of key 'Red' risks shall be reported and included in the Project Initiation Document [New link] or Project Change Forms (outside tolerance) [New link]

This is to ensure that:

- New risks relating to changes in the context are identified, recorded and managed
- Risks which are no longer relevant in view of the context are identified and recorded
- Changes to risk severity are identified and recorded
- Current status of treatment plans are monitored
- Changes to owners or actionees are identified and recorded.

A trend report can be produced showing the progress of risk management throughout the life of the project

Where a quantitative risk analysis has been produced, this can be updated to determine the current risk contingency required.

Risks shall be reviewed as per the procedure for Tasks A to D above. The risk log/register/schedule and related reports shall be used by the Project Manager to review risks with the project team and the Project Steering Group ('red' risks).

All risks input, changed or deleted from the risk log/register/schedule shall be reviewed and approved by the Project Manager to ensure risk data is up to date, accurate and complete.

Deliverables:

- Updated risk register stating current risks (including new risks) and status of risks and treatment plans
- Risk reports stating current risk details and ranking, trends and management performance.

The completion of Tasks A to E, responsibilities and outputs during each of the project stages is set out above.