**Risk Register – Band 2 and 3 Projects**

**Guidance Notes**

This document provides guidance on how to develop a Quantitative Risk Assessment for Band 2 and 3 projects using the risk register template provided as part of the Cost Management Guidelines. The risk register has two primary purposes:

1. It is a risk management tool that is used to record, assess and analyse risks. This will allow risks to be allocated to the party best placed to manage them and to identify/record mitigation strategies implemented to remove the risk, reduce the likelihood of it occurring and the impact if it does occur.
2. To provide an input upon which a monte-carlo analysis (or approved alternative) can be carried out to establish a risk value for incorporation into cost estimates.

**Applicability**

The risk register template shall be used in preparing cost estimates from Phases 3 to 5 of the NTA Project Life Cycle for all Band 2 and 3 projects. If the NTA provides written approval, the risk register may be altered, or an alternative methodology may be adopted to establish a project risk value.

**The Process**

This section outlines a step-by-step approach on how to develop a Quantitative Risk Assessment using the risk register template;

*Step 1 – Complete Project Information*

**Enter the title of the project, the project/contract code and the current project phase, the capital cost estimate (Construction, Preparation & Administration and Traffic Management Costs) and the date that the risk register was updated**. This step is important because it will provide a view on how the risk on the project develops as it moves through each project phase.

*Step 2 – Identify Project Risks*

**Risks and opportunities to the project (including entering a Risk ID and the date the risk was identified) shall be identified by the project team and logged in the project risk register**. This may include risks/opportunities to cost, quality or programme.

It is recommended that risk identification, analysis and assessment takes place in a workshop environment. It is important that these workshops are attended by technical discipline representatives and other important members of the project team.

*Step 3 – Identify Risk Responses*

**Responses to project risks shall be entered into the project risk register.** These responses should focus on any actions that might reduce the likelihood of the risk occurring or the impact if the risk does occur.

*Step 4 – Identify the Risk Owner (Individual / Organisation), Category, Risk/Opportunity and the Technical Discipline*

Risks shall be allocated to the party best placed to manage them. **It is therefore important to:**

* **Allocate risks to a ‘risk owner’**.
* **Categorise risks**.
* **Confirm if the item is a risk or an opportunity**.
* **Allocate risks to the technical discipline**.

This process creates an ethos of accountability that acts as an incentive to monitor risks and to ensure risk management strategies are implemented. It also provides administrative and organisational benefits to managing risks.

It is not good practice to allocate all or a significant majority of risks to one party. Risks shall be allocated to the party that is best placed to manage them, in other words, the party that is best placed to have a positive influence in removing or mitigating the risk.

*Step 5 – Assessing the Risk*

Risks shall be assessed according to the probability of the risk occurring and the impact they would have if they did occur.

**The probability of the risk occurring shall be assessed by ranking the risks using the following scale**:

|  |  |  |
| --- | --- | --- |
| **Rank** | **Probability of Occurring** | **Probability - %** |
| 0 | Not Possible | 0% |
| 1 | Negligible | <5% |
| 2 | Unlikely | 6 - 20% |
| 3 | Possible | 21 - 50% |
| 4 | Probable | 51 - 80% |
| 5 | Almost Certain | >80% |

When the risks are ranked a probability percentage is automatically populated, which is derived from the ‘Risk Process\_RR Explanation’ tab of the risk register.

The next step in assessing the risk is to determine the impact of the risk if it were to occur. **The impact of the risk occurring shall be assessed by ranking the risks using the following scale:**

|  |  |  |
| --- | --- | --- |
| **Rank** | **Impact if Risk Occurs** | **Impact - % of Project Base Cost** |
| 0 | No Impact | 0% |
| 1 | Minimal | <0.5% |
| 2 | Minor | 0.5 - 1% |
| 3 | Moderate | 1 – 3% |
| 4 | Large | 3 - 5% |
| 5 | Major | >5% |

When the risks are ranked an impact percentage is automatically populated, which is derived from the ‘Risk Process\_RR Explanation’ tab.

Risks are also attributed a minimum, most likely and maximum value. These values are extracted from the cost matrix in the ‘Risk Process\_RR Explanation’ tab, in which the capital cost estimate is multiplied by the minimum, most likely and maximum impact percentages.

From this information, minimum, most likely and maximum risk values based on the probability of occurring are established.

If the risk impact is ranked as Category 5 (Major Impact – >5%), the risk impact and values shall be reviewed in conjunction with the Sponsoring Agency to determine if the impact cost percentage/value is sufficient. If it is deemed insufficient, the impact cost shall be adjusted manually in the risk register to a percentage that is agreeable to the Sponsoring Agency.

The maximum risk impact as a percentage of the project cost is 15%. Any identified risks that have a potential impact that could exceed this amount should be highlighted to the Sponsoring Agency and an acceptable risk impact percentage manually inserted.

Supplemental to this process is the rating of the risks. The probability and ranking are multiplied to provide a risk rating. Which are rated according to the following scale, which provides a snapshot of the key project risks:

|  |  |
| --- | --- |
| Risk Score | Risk Rating |
| 1 - 4 | Low Risk |
| 5 - 14 | Medium Risk |
| 15 - 25 | High Risk |

*Step 6 – Identifying the Risk Status*

**The status of each risk shall be logged according to whether it is ‘Pending, Residual or Closed’.** This will ensure that attention is focused on risks that are still live, but also allowing the project team to identify any risks that have passed.

*Step 7 – Establishing a Risk Value*

**A Monte-Carlo analysis, or an alternative approved method of analysis, shall be carried out on the updated risk register using software that has been approved by the Sponsoring Agency**. A monte-carlo analysis simulates thousands of project scenarios based on risk probabilities and the minimum, most likely and maximum risk values. The output of this analysis is risk values at specific confidence levels (percentiles).

The confidence level at which risk values are to be determined should be agreed in advance with the Sponsoring Agency. However, it is recommended that a minimum confidence level of the 50th percentile should be used.

Each cost estimating template includes a section into which each user should insert the project risk value.