

4.2.1 INTRODUCTION

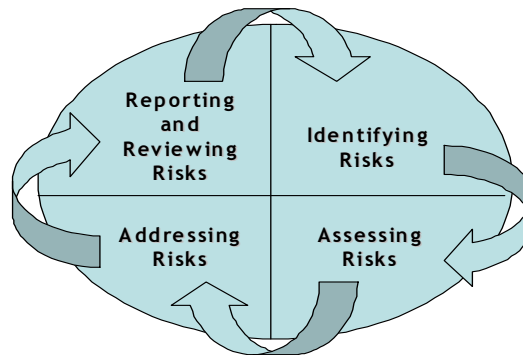
This appendix sets out the Risk Management Strategy (RMS) in support of the South Bristol Link (SBL) Major Scheme Business Case (MSBC)

The purpose of the RMS is to set out the risk processes and the escalation procedure.

4.2.1.1 Risk Management

Risk management is the process of identifying risks, evaluating their potential consequences and determining the most effective methods of controlling and/or responding to them. It is not an end in itself. Rather, risk management is a means of minimising the costs and disruption to the project caused by undesirable events. The risk management process is shown in Figure 1 below:

Figure 1 Risk Management Process



The aim of risk management is to reduce the frequency of risk events occurring (wherever this is possible) and minimise the severity of their consequences if they do occur. Even when the likelihood of an event occurring cannot be controlled, steps can be taken to minimise the consequences.

The purpose of the RMS is to:

- Ensure risk management is an integral part of project management decision making, planning and implementation;
- Ensure risks are managed in accordance with good practice, as part of good project governance;
- Respond to risk in a balanced way, mindful of the risk level, risk reduction potential, cost/ benefit and particular resource constraints; and

- To provide guidance on the following areas: aims and objectives of Risk Management; roles and responsibilities for managing risk; risk financing; and risk management process.
- Risk management includes:
 - Identifying and assessing risks;
 - Reassessing the impact and likelihood after controls have been implemented (the 'residual risks');
 - Responding to risks through agreed controls; and
 - Monitoring and reviewing progress.
- The remaining sections of this RMS set out the details for these processes.

4.2.1.2 Identifying and assessing risks

Risk identification is the process of uncovering the type and sources of risks that are associated with a project and the subsequent communication of those risks to the relevant Stakeholders. Risk identification must begin as early as possible in a successful project and continue throughout the life cycle of the project.

Risk identification depends on clear lines of communication that encourage all personnel to communicate new risks.

Project risks are identified through the following mechanisms:

- Workshops held to identify risks;
- Prompt lists and checklists;
- Interviews with key contributors and stakeholders;
- Regular review of the risk log;
- Risk review workshops; and
- Independent reviews.

4.2.1.3 Regular Review of Risk Register

Three risk workshops have been held for the Scheme. The workshops aimed to understand the full range of risks likely to be encountered in the stages up to project completion. The workshops involve a varying range of expertise, including representatives of consultants, other authorities and the Highways Agency. The first of the workshops was held soon after project inception in 2006 when the nature of the scheme was not well defined. It was at this risk workshop that the risk log was first produced. Subsequent workshops have updated the risk log and the risk log is also reviewed at monthly progress meetings. Key (red) risks are reported to the Project Board quarterly.

The Project Team meets regularly and brings together the workstream leaders with responsibility at this meeting to report on issues and risks arising in their area of responsibility. This ensures input from across the different disciplines and risk areas. In addition the risk register is reviewed in Project Team meetings as part of preparation of Project Board reporting.

The Project Board meets quarterly. Risk is included as an agenda item and provides the opportunity for any additional risks to be raised with the Senior Responsible Owner (SRO) and Project Director. The latest risk register and highlight report is provided (reporting is discussed below). The Project Board members also cover a range of disciplines – including legal, financial and property as well as transport – which facilitates the identification of issues.

Risk review workshops will continue to be held at regular intervals. The purpose of these workshops is to take a 'fresh look' at the risk register to ensure all potential issues are identified. The attendance at these workshops is wider than the Project Team members and can include officers from other West of England Authorities to share knowledge and experience from other MSBCs and major projects in the region.

These workshops also, when appropriate, include a review of the Quantified Risk Assessment (QRA). An independent risk specialist facilitates the review workshop and assists to identify key risks and their impacts. The results are incorporated in to the QRA (discussed in more detail below) and the risk register is updated accordingly.

4.2.1.4 Independent Audit and Review

In addition to the above processes the project has access to additional independent advisors who, as part of their assurance roles, note key risks. This is in relation to:

- Capital Costs – reviewed by independent quantity surveyors. This review looks at the accuracy of cost estimates but also flags up potential risks and assess the suitability of risk contingency in relation to the potential risks identified; and
- Finance – reviewed by independent financial consultants who report directly to the s151 officers for the Authorities. The scope of their review is on the financial issues and risks of the project including review of potential ongoing costs and liabilities, revenues and appropriateness of risk contingencies.

4.2.1.5 Risk Assessment

Having identified areas of potential risk, all risks need to be systematically and accurately assessed. The process requires:

- an assessment of the likelihood of a risk event occurring; and

- an assessment of the potential severity of the consequences should such an event occur; and
- an estimate of the likely cost of future incidents.

All risks are rated high, medium or low against the likelihood of event, the severity of the impact on the cost, programme or performance of the project. The ranges used to calculate the risk are set out in Figure 2.

Figure 2 Probability Criteria

Scale	Likelihood	Description
0	0 - 5%	Rare
1	6 - 12.5%	Unlikely
2	13 - 25%	Possible
3	26 - 50%	Likely
4	51 - 95%	Almost Certain

Figure 3 Risk Assessment Ranges

Overall Impact	Value (£k) Preferred Scheme	SAFETY	TECHNICAL QUALITY	ENVIRONMENTAL	COMMUNICATIONS /PR	PROGRAMME	REPUTATION
Low	£ 50	Not causing injury	Not affecting objectives	Short-term local (Non reportable incident. Emission which can be contained on-site)	Communications issues dealt with through D2D PM	Minor non Critical Path delay	Minor revenue loss / Embarrassment / Local.
Medium	£ 500	Lost time injury (reportable)	Compromise of limited number of objectives	Short-term Regional (Reportable Incident. Pollution and/or Prohibition Notice)	Affects communications and behaviours within a single partner team	Major non Critical Path delay	Major local reputation loss
High	£ 2,500	Major accident or injury	Major compromise of some objectives	Long-term local (Injury / Serious or long term damage)	Affects communications and behaviours within the project team	Minor Critical Path delay	National reputation loss
Extreme	£ 5,000	Fatalities	Failure to deliver objectives	Regional Scale (Fatality and/or permanent change to environment) - (Resulting in prosecution by E.A / fines / criminal proceedings.	Objections leading to significant extension to consultation period / Public Inquiry	Major Critical Path delay	Short-term international reputation loss

4.2.1.6 Quantified Risk Assessment

The potential risks of the project are also taken through a QRA to determine the level of capital cost contingency required in order to have a high level of confidence to cover the cost of constructing the SBL.

To date the QRA has been confined to the capital cost elements of the project, and the construction programme. Risks to operational costs, performance or revenues have not been quantified. This will be undertaken as the project progresses.

The probabilistic model used is (@Risk), which takes into account both cost and time within the risk model. The model aims to replicate the project being implemented many times, (typically 10,000 times), potentially with a different result on each occasion. The distribution of results is plotted against their frequency of occurrence. These probabilistic predictions relating to cost and timescale allow project sponsors to plan budgets at their selected level of confidence.

Estimating tolerances are developed by reviewing sub-elements of the work, and three-point estimates represent possible variations due to pricing and design risk. A default range is used for the majority of elements as 'most likely' although a 'least cost' and 'maximum cost' range is also defined.

These are possible events that have been identified as having a chance of occurring and of impacting the project programme and/or cost to some degree. An initial set of risks was identified through risk workshops. As outlined above the review of risks through the QRA process are fed back in to the risk register.

4.2.1.7 Risk mitigation and residual risk

Once the risks are recorded and assessed a plan to manage the risks is identified and allocated to the risk owner. There are four main options for risk management:

- Avoid - the risk by not undertaking the activity or avoiding the circumstance that gives rise to the risk e.g. stop doing something.
- Reduce - the risk e.g. take actions to reduce the likelihood that the risk event will materialise, by applying controls.
- Transfer - the risk e.g. passes the risk to another party through insurance or by contracting it out. This reduces the impact if a risk event occurs.
- Accept - the risk and do nothing. This applies to risks outside the remit of the Authorities.

The approach to the risk is included in the risk register along with an initial list of actions or mitigation plans. Mitigation will be comprehensive

for all risks but more focus will be placed on the highest risks and this will be adjusted as these are reduced/resolved (as discussed below).

All new risks identified, the risk management approach and initial mitigation measures are reported to the Project Board as per the established reporting process (discussed below). Through this the Project Board has the opportunity to provide comment on the assessment and proposed treatment of risks.

After mitigation is identified risks are reassessed in the Risk Review Workshops as set out in the sections above. This is recorded in the risk register. The risk owners are responsible for the mitigation actions.

4.2.1.8 Responding to risks

The responsibility for risk management is set out in the PID. In summary, these responsibilities are:

The Project Board is responsible for:

- Approving the PID;
- Reviewing the Project Plan and approving any changes necessary;
- Approving any changes to the risk log and any additional mitigating actions;
- Approving any changes to the Project Plan recommended by the Project Director via highlight reports;
- Considering any exception reports that may arise during the life of the project and requesting exception plans where appropriate; and
- Approving any exception plans that may arise.

The Senior Responsible Owner (SRO) for SBL is the North Somerset Council Assistant Director, Development and Policy, Karuna Tharmananthar. The SRO has overall responsibility for ensuring that the Project meets its objectives and delivers the projected benefits within the time, cost and quality parameters. The SRO is the Chair of the Project Board. The SRO is empowered to manage the overall programme to deliver the required products within the constraints agreed with the Project Board and to approve changes to programme, tasks and work packages within the agreed tolerances set by the Joint Transport Executive Committee (JTEC).

The Project Manager (PM) is responsible for delivering the Project in line with the agreed controls and procedures set out in the Project Initiation Document (PID). The PM is responsible for the highest possible level of compliance with the relevant investment and project management approaches including third parties processes.

The primary focus of the PM would be to define the Project Plan and to ensure that the Project is delivered on time and within specification and budget, seeking additional authorities as necessary. This would involve development, monitoring, progress chasing and co-ordination of the programme as a whole and ensuring that all elements of the programme are delivered with the appropriate technical competency. In particular the role would be:

- To obtain approval from the Project Board for the Project Plan;
- To recommend to the Project Board and then implement the necessary actions to secure the required MSBC processes;
- To plan for and co-ordinate the necessary assurance processes;
- To account for the delivery of the Project, on time and within specification and budget;
- To secure the approval of the JTEC for key strategic decisions;
- To lead a Project Team and ensure adherence to the Project Plan;
- To produce periodic Progress Reports for the JTEC, Joint Scrutiny, Directors, the Department for Transport, and the West of England Partnership;
- To carry out day to day communication role between the DfT and the four authorities.
- To deliver the risk management strategy

The Project Manager has accountability for risk management as well as the authority to:

- Input new risks to the risk register;
- Update information in the risk register; and
- Close risks identified in the risk register.

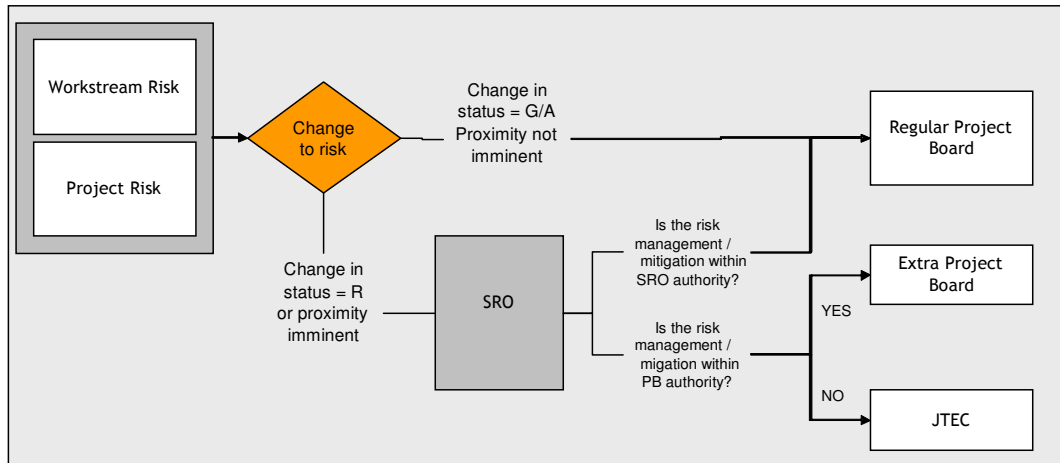
In order to exercise this authority, however, the Project Manager may direct others to update the risk register using only information that has been approved by them. This must be agreed with the SRO.

Internal processes are employed to identify, escalate, manage, monitor and report the risks and assumptions for the project. Specifically, these are:

- Project Team fortnightly meetings / tele-conferencing;
- Project Board meetings; and
- Exceptional reporting workstream leaders to flag to Project Manager.

Risk escalation is a critical process to ensure that risks requiring intervention from a higher authority are identified promptly. If a change in a significant risk has been identified, at any time, the Project Manager will assess the level of the risk. If the risk level increases to Red then the SRO will call for either a Special Board Meeting or a meeting with the JTEC depending on the nature of the risk. If the level of the risk remains at green or changes from green to amber then the Project Director will add the risk item onto the agenda for the next scheduled Project Board meeting. This process is shown in Figure 5:

Figure 5 Risk Escalation



The risk escalation process will be put into effect when one of the following occurs:

- The circumstances of a risk change, resulting in it now being re-classified (e.g. workstream level risk moved to project level);
- The mitigating strategy of a risk is proving ineffective and the risk is not being reduced or removed as expected;
- Automatic escalation if a risk has moved from an amber status to red;
- Automatic escalation if a risk has moved to 'imminent' in terms of proximity;
- The current risk owner requests that the risk be escalated as it is not under control; and
- Review of risk register by the Project Director or SRO highlights the current management of a risk as ineffective.

Risk escalation will not necessarily result in a change of risk ownership. In many cases the risk will be escalated to the higher authority who will then work with the risk owner to devise a suitable mitigation strategy that the risk owner will then implement.

4.2.1.9 Monitoring and reviewing processes

Regular updating and reporting of the risk register is undertaken through the process of reporting to the Project Board. This continual review is important to ensure that the most appropriate risk owners are allocated to specific risks, that new risks are identified and that existing risks are monitored or actioned as appropriate.

The Project Team would develop mitigation action plans for all identified risks, and detailed action plans for major risks, including the identification of individual risk owners.

These plans will be reviewed regularly to ensure the most appropriate course of action is being taken. Mitigation plans will be comprehensive for all risks but more focus will be placed on the highest risks and this will be adjusted as these are reduced and/or resolved.

Once the risks are recorded and assessed a plan to manage the risks is identified and allocated to the risk owner. The risk register is then updated with revised information on:

- Risk management approach/option; and
- Mitigation plans.

4.2.1.10 Project Board Risk Reporting

As part of the Board Progress Reports a Risk Report is provided. This provides an up-to-date report on risk at the time of submittal and information on risk management activity during the month.

The report sets out:

- Identification of any specific issues to be raised and discussed by the Project Board;
- Any changes to the risk register;
- Top five risks (once changes are made); and
- Full copy of risk register.

Reporting is the responsibility of the PM.

The Project Manager is authorised to close risks once the possibility of the event occurring no longer exists. These are treated as changes to the risk register and risk management process.

4.2.1.11 Risk Assessment Results

The results of the quantified risk assessments and the risk registers for the Preferred Option and Lower Cost Option are set out below.