A61 LONDON RD / BROADFIELD RD
HIGHWAY IMPROVEMENT SCHEME

RISK MANAGEMENT STRATEGY

Version: 1.0
Date: 21/06/17
Status: Final
1.0 Risk Management

A systematic approach to cost risk management will be undertaken on this project. In line with the PRINCE2 Methodology a Risk Register was established at the ‘Starting up a Project’ stage in order to identify, record, assess and prioritise the risk associated with the project. This initial Risk register is attached at Appendix XXX

The Risk Register is a live document which is maintained by the Project Manager and will be reviewed and updated at regular risk management meetings. It will be used for reporting the significant risks to the Project Board. The next stage, prior to funding award will be to undertake a detailed risk workshop.

The ‘Base Scheme Cost’ has been adjusted for the risk associated with the project at this stage by undertaking a Quantified Risk Assessment (QRA) utilising the outputs from the start up Risk Register.

The current version of the Risk Register provides a snap shot of the risks facing the project at this stage of its development. It will be kept under review at all times, the plan for ongoing risk management is detailed below:-

(i) Individual risks will continue to be monitored by their owners.
(ii) The project team will review the risk register at regular risk management meetings.
(iii) The larger scale risks will be reviewed by the Project Board and SRO.
(iv) The Project Manager will ensure the Risk Register is kept up to date and monitor the total impact of these risks.
(v) At key milestones the risk register will be formally reviewed and updated. The financial impact and probability of the risks determined at these reviews will be used to populate and update the Quantified Risk Assessment

2.0 Risk Identification and Ownership

The Risk Register is updated and reviewed continuously throughout the risk management process. When new risks are identified during the course of the development of the project the Project Manager is notified and the risk recorded on the Risk Register. Each new risk is then evaluated at the regular risk management meetings held with appropriate members of the delivery team.

At the initial risk workshops and subsequent risk management meetings, a risk owner will be assigned to take responsibility for each risk and identify, and manage, the mitigation measures to be implemented to reduce the probability of occurrence or the impact of the risk.

3.0 Risk Quantification

The process for assessment of each risk is to identify the effects of its occurrence together with the likelihood of the occurrence being realised. The probability of occurrence, expressed as a percentage, is based on the following table.
### Assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Probability %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>Very Low</td>
<td>1% - 10%</td>
</tr>
<tr>
<td>Low</td>
<td>10% - 30%</td>
</tr>
<tr>
<td>Medium</td>
<td>30% - 50%</td>
</tr>
<tr>
<td>High</td>
<td>50% - 70%</td>
</tr>
<tr>
<td>Very High</td>
<td>70% - 100%</td>
</tr>
</tbody>
</table>

The financial impact of each risk is analysed by estimating the most likely cost outcome associated with the risk, together with an estimate of the minimum and maximum cost in order to carry out a quantitative analysis of the risks using the @RISK software operated by SYPTE.

The @RISK software performs Monte Carlo simulation techniques to calculate the financial allowance appropriate to each risk. The total for all the individual risks is calculated in @RISK and the sum of the totals from each risk used as the quantified risk allowance included in the project Cost Plan. The @RISK output report is attached at Appendix XXX.

### 4.0 Risk Mitigation

The options for responding to the risk are to tolerate, treat, transfer or terminate the risk and appropriate mitigation measures are determined from the agreed response to the risk identified at the risk management meetings. The mitigation measures and actions are recorded in the Risk Register.

Regular monitoring of the Risk Register with the risk owners will take place to review any changes to the status of each risk and review the effectiveness of the mitigation measures, particularly for the significant risks on the project.

Risks at this stage of the project fall into two distinct categories **pre contract award** and **post contract award**.

The most significant risk to project delivery is in relation to securing a small tranche of land currently in third party ownership.

A summary of the most significant risks associated with the project are set out below together with appropriate mitigation:

**Pre Contract Award**

(i) Accuracy of current works estimates
Mitigation: An independent cost audit will be undertaken to confirm that current estimates are robust, however at this stage accuracy of construction costs is still a risk and will require ongoing monitoring as the project proceeds.

(ii) Accuracy of Statutory Undertakers estimates

Mitigation: Current estimates are based upon desktop information, this will be refined as the project proceeds including detailed discussions with statutory undertakers and trial hole excavations to accurately locate affected apparatus.

Post Contract Award

The works contract will be awarded to Amey who are now in a 25 year PFI framework contract with Sheffield City Council. The contract will be awarded on a fixed price lump sum basis issued as an NEC ECC Option A Priced Contract with Activity Schedule. At contract award the fixed price construction cost is based upon a work schedule and drawings priced at the end of the detailed design stage using rates set in the Schedule of Rates within the PFI contract.

The existing long-term working relationship with the City Council has already demonstrated a good working relationship with regard to claims compared to “one off” contracts, and we would expect this relationship to continue to limit cost over-runs. The NEC contract does however allow the contractor to recover costs deemed to be ‘Compensation events’ so a selective small number of risks remain in the Risk Register at the construction stage.

The City Council has satisfied itself that the use of Amey to design and build the great majority of transport capital schemes for at least the next five years is the preferred most cost effective and most risk-averse solution.

5.0 Risk Allowance

The level of risk included in the Quantified Risk Assessment is £XXXX which represents approximately X% of the estimated works/stats cost.