

Risk Description	Possible Consequences	Current Controls	Likelihood	Initial Risk Score	Residual Risk Score	Comments
Potential scope change post target cost	<ul style="list-style-type: none"> <li>Increase costs</li> </ul>	<ul style="list-style-type: none"> <li>Robust estimate</li> <li>Construction cost monitoring in line with design development</li> <li>This is a reconciliation of the development items listed previously which were realised in Jan19 update and removed</li> </ul>	5	25	10	Recent change values to similar schemes 13M
Failure to achieve detailed design completion in advance of construction	<ul style="list-style-type: none"> <li>Additional cost of compensation events on site</li> <li>Miss critical programme windows</li> <li>Issues with staff mobilisation / retention</li> <li>Reputational damage of delays</li> </ul>	<ul style="list-style-type: none"> <li>Robust supervision of design</li> <li>Establish clear communication and EWN process and agreement</li> <li>Define clearly what target price is based upon to id change</li> </ul>	3	15	10	This item is to allow for any items missed outwith the current series and to reflect reworking of design as well as construction costs
Ecology - Proximity of Protected Species or Habitats to site	<ul style="list-style-type: none"> <li>The risk that licences and consents from third parties aren't secured to fit with programmed works</li> <li>Essential that LCC supply information to enable applications for licences to progress</li> <li>Essential that Costain submit those in a timely manner</li> <li>Scheme and or opportunity could be delayed/missed</li> </ul>	<ul style="list-style-type: none"> <li>Scoping exercise completed</li> <li>Full Environmental Assessment carried out to review risks and mitigation methods</li> <li>Effective forward planning and early engagement with statutory bodies will help mitigate this risk</li> </ul>	3	15	12	Highlight to LCC information required. Detail in programmes when it is needed by Consequences of such could be significant delay to the scheme by an ecological season
Refusal of licences / consents from statutory bodies	<ul style="list-style-type: none"> <li>Delayed construction or requirement for re-design</li> </ul>	<ul style="list-style-type: none"> <li>Early consultation with regulatory and licencing bodies</li> </ul>	4	20	5	July 18 NE have announced that not doing PSS or DSAS for at least 6 months
Worse ground conditions for structures than expected	<ul style="list-style-type: none"> <li>Potential delays / to programme / further water management</li> </ul>	<ul style="list-style-type: none"> <li>Site team to manage jointly with Contractor during construction phase</li> </ul>	4	16	8	Price as a % of the current total piling cost now (1/06/18) £7,004,812
Weather impact on project; weather exceeds 1:10 year average (rain, snow, wind, drought)	<ul style="list-style-type: none"> <li>Potential to delay the construction works, significant risks associated with the management of excessive water/ runoff etc.</li> <li>Possible impact of additional watering required if drought in landscape establishment period</li> </ul>	<ul style="list-style-type: none"> <li>Review of weather records for the area (or relevant weather station)</li> </ul>	4	20	12	Establish that correct weather station is allowed for within contract.
Risk of settlement to existing assets (CRT/ NR) resulting from embankment construction	<ul style="list-style-type: none"> <li>Risk of damage during construction</li> <li>Construction works stopped if movement outside acceptable limits</li> <li>Closure of third party asset if damage occurs</li> <li>Reputational damage to all parties</li> <li>Repair costs</li> </ul>	<ul style="list-style-type: none"> <li>Design solution to reduce loadings from embankments and bridge</li> <li>Select form of construction to minimise risk</li> <li>Monitor during construction</li> </ul>	4	20	15	Currently there is an issue with regards to track movement during bridge works as not being acceptable by NR. May need change to design on order to alleviate settlement to lightweight fill or similar other wiseconsequences of movement could be significant. - Also since electrification there is a risk of track and overheads moving and retamping track but oh clearance now differing
Risk of accidents having regard in particular to substances or technologies used	<ul style="list-style-type: none"> <li>Risk to Safety during construction</li> </ul>	<ul style="list-style-type: none"> <li>Risk Management plan in place as part of any contract awarded for development</li> </ul>	4	16	8	Worst case major incident , lowest minor site claims.
Extraordinary material/fuel price increase/fluctuation/BREXIT etc	<ul style="list-style-type: none"> <li>Additional costs</li> </ul>	<ul style="list-style-type: none"> <li>Rolling review of market volatility - may be prudent to explore alternatives to secure costs; early procurement, vesting, inflation and price fixity in subcontracts for high risk elements.</li> </ul>	4	20	15	Worse case based upon increase to steel price by 20% to structural and reinforcement.
Failure to adequately protect Hodder Aqueduct during construction - leading to damage/ leak	<ul style="list-style-type: none"> <li>Significant disruption to the water network</li> <li>Significant discharge of water on site</li> <li>Fine &amp; or repair costs from UU</li> <li>Delay during repair</li> <li>Disruption to water supply to residents/ business</li> </ul>	<ul style="list-style-type: none"> <li>Engagement with UU to consider what diversion/ protection or controls will be required</li> </ul>	4	20	10	Allowance for closure and remedial works
Hodder Aqueduct diversion - scope and timescales	<ul style="list-style-type: none"> <li>Failure to adequately address design leads to delays</li> <li>Significant costs associated with diversion</li> <li>Lack of engagement from UU slowing progress</li> <li>Failure of UU contractor to complete the works by May 2020</li> </ul>	<ul style="list-style-type: none"> <li>Ensure communication with UU as frequetas required</li> <li>Regular meetings and updates as to methods etc</li> <li>Review UU contractor progress on site</li> </ul>	4	20	15	UU now completed 7 versions of estimate March 2019 - latest one looks to be accepted by LCC - 2019 start complete works in May 2020 -Allowances assuming 2 month 3 month 4 month delay to elements in that area
Availability of seed stock for plants, shrubs, grasses, wildflowers	<ul style="list-style-type: none"> <li>The specified volumes of plants may not be available at time required if seed stock not secured now.</li> <li>Seed stock may have to be sourced from other zones - note ideal</li> <li>Delay to planting and ecology mitigation awaiting suitable stock</li> <li>Redesign of landscaping design required to match available stock</li> <li>Potential additional cost.</li> </ul>	<ul style="list-style-type: none"> <li>We have advised landscaping of this potential problem further to meetings with supply chain and best advice</li> </ul>	4	16	12	This has still to be properly taken on board by LCC. There are insufficient local seeds and shrubs and trees to accommodate the master plan requirements. Specification is expensive and unrealistic. Planting would have to start min 2 years pre requirements to acheive programme.
Uncertainty of construction programme duration	<ul style="list-style-type: none"> <li>Failure to acheieve the design programme and issue for Construction drawings prior to TC</li> <li>Failure to achieve design and governance programme will affect the start on site date</li> <li>This could affect environmental and other issues which in turn could lengthen the overall deliver programme duration as well as inflationary costs.</li> </ul>	<ul style="list-style-type: none"> <li>Updated design programme informatin fortnightly to keep team aware of progress.</li> <li>Updated inflationary costs.</li> <li>Awareness of best and worse start dates</li> </ul>	4	16	12	Worse case based upon 6 months additional full prelims
Site ground conditions don't match those predicted from GI	<ul style="list-style-type: none"> <li>If significant variation then there may be an impact on the detailed design solution.</li> </ul>	<ul style="list-style-type: none"> <li>Ground investigation information to be reviewed.</li> <li>Further GI if necessary for sensitive areas.</li> <li>Ensure design can accomodate a level of change within conditions.</li> <li>Communicate change between all different elements as and when realised.</li> </ul>	3	15	10	