Strategic Estimating Model - Estimate Release Form

CP056 Version 1.4.0

Capital Expenditure

Scheme Details

Project Name	M6 - A1(M) - Pack V I, Segment 8B: A1M to A6 (Tadcaster)
Type of Estimate Requested	Strategic Estimate
Estimate Ident fica ion Number	1125
Type of Project	New Construction
Primary C assification of Scheme	Bypass
Date of This Estimate Release	31/03/2020
Scheme length	10.37 Km

Category	Scope of Works
New Link Roads	New Link w th a D2AP cross sect on for 10.37km; No. of structures: 1 viaducts, 2 roadbr dges,9 other structures such as minor road structures,private access structures,accomodation bridges and underpasses; Length of Retaining Walls in Cut and Fi l:520m; No. of culverts: ; Demol tion of commerc al/residencial bui dings:11 no. Cut volumes:210,396 m3 and Fill volumes: 211,818 m3.The earthworks quanti ies prov ded by the Project Team are including for topsoil but excluding of capping and the new pavement box.The capping thickness assumed within estimates is 0.3m (0% proportion of capping).Earthworks Strategy:Most Likely Scenario includes or 80%Acceptable Mater al other than 5A,19%Un-Accep able Mater al U1A and 1% Un-Acceptable Material U2.Percentage of Re-use the Acceptable Material:100%.Percentage Processed for re-use Un-Acceptable Mater al:80%.Minimum Scenario includes for 90% Acceptab e Material other than 5A,9%Un-Acceptable Material U1A and 1% Un-Accep able Mater al U2.Percentage of Re-use the Acceptable Material:100%.Percentage Processed for re-use Un-Acceptable Mater al:100%.Maximum Scenario includes for 70% Acceptab e Material other than 5A,29%Un-Acceptab e Material U1A and 1% Un-Accep able Mater al U2.Percentage of Re-use the Acceptab e Material:100%.Percentage Processed for re-use Un-Acceptable Material:75%.
Widening	
New Junctions	1 no Diamond has been included w thin this scheme.
Junct on Improvement	
Techno ogy	

Base Cost Estimate & Risk (Q1 2016)

	Minimum	Interim Scheme (Mode) ML	Maximum
Base Estimate	£163, 26,92 .8	£333,865,963.99	£706,9 3,90 .82
Risk Adjustment	£8,171,3 6 2	£83, 66, 91.00	£269,398,683.83
Subtotal	**£171 598 271 09**	**£417 332 454 99**	**£978 342 588 65**

Inflation and Portfolio Risk

	Minimum	Interim Scheme (Mode) ML	Maximum
Inf ation Adjustment	£76,578,720.00	£ 1 ,0 0,896.00	£1,69 , 72 827.00
Portfo io Risk Adjustment	£32, 92,201.00	£82,770, 82.00	£133,08 , 91.00
RET Adjustment Subtotal	£109,070,921.00	£ 96,811,378.00	£1,827,557 318.00
Estimate Out urn	**£280 669 192 09**	**£914 143 832 99**	**£2 805 899 906 65**

Summary of Proposed Scope of Works

PACK V I Scope of Works ncludes Segments 8B as fo lows:
Construction Durat on;
Minimum: 39 months
Most Likely: 5 months
Maximum: 66 months

Bespoke Items included such as:
Ground Improvement considered for 50 m around W ghi l lane/Catterton.
0 000m2 of Additional ecological and landscaping measures,
2.82ha Relocation of wood and.

Stage Dates

	Normal Start	Normal Finish
Pre PCF	05/06 2019	30/05/2020
Stage 1	01/0 2029	31/08/2030
Stage 2	01/09 2030	30/0 /2031
Stage 3	01/05 2031	31/08/2033
Stage 4	01/09 2033	31/05/203
Stage 5	01/06 203	30/0 /2035
Stage 6	01/05 2035	31/01/2039
O (Open to raffic)		01/02/2039

Comments

This range estimate has been produced using an estimating approach (Strategic Estimating Model) that is suitable for schemes before they enter the Project Control Framework (PCF Stage 0, prior to entry to the Major Projects portfo io). The matur ty level of project definition is low, limited to an out ine concept. Guidance from AACE recommends that for schemes of a sim lar stage of design and maturity an expected range of accuracy around the most likely value would be -30% to 50%. Whilst this estimate does not cons der these generic percentage ranges, the guidance prov des a level of assurance around the range.
Use of SEM to produce an estimate for this scheme has been agreed with the Project Manager in order to provide a h gh level order of magn tude range estimate of the scheme costs based on the SGARs provided by the Project Team. Highways England Cost Planning has reviewed the SEM model outputs against the proposed des gn and made top-down adjustments to better reflect the scope. However, due to the time constrain s and level of deta l , th s approach does not consider the spec fic des gn, project and site characteris ics that may be available. It s likely that mode (most likely) of the estimate could be subject to sign ficant change once the scheme scope, design, schedule and risk bas s are specif cally cons dered.
The estimate assumes that all works shown on the supplied des gn drawings, wi l be delivered through a Highways Eng and Major Projects to a delivery programme in accordance with the SGAR dates in this orm 300. These SGAR dates have been used to budget time-related costs and inflation. The estimate assumes that the scheme wi l need to comp ete all of the PCF Stages including S age 0 (Pre-Options), Options and Development.
- Estimated costs for the MM4W Series 100 project overheads and method-related costs have been based on a percentage of estimated direct works costs, in line with schemes of a similar value and scope from cost inte ligence data on historic H ghways England schemes.
- The range applied to the direct works represents the expected var ation of scope and delivery from the most likely posit on. It does not cons der the construction and delivery of an alternative solution to that proposed by the project team.
- Hstor cal costs are included w th the estimate as spend o date 19/02/2020 and t has been prov ded by the Project Manager.
- Lands and Statutory Undertakers costs are derived from top-down metr cs within the SEM and District Valuer / Third-party lands cost estimates have not been cons dered. Estimated ands and SU costs are therefore based on histor cal norms from historic H ghways England schemes.
- Unschedu ed i em Allowance, Project specif c risks, Uncertainties and Por folio Risk allowances are estimated based on a proportion of the base estimate. This is aligned to HM Treasury Green Book supplemen ary guidance.
Inflation allowance included in the estimate s based on the latest agreed inflation prof le .
Where the proposed scheme includes works where the SEM approach s not considered suitable, other estimating methods have been used, including: i) speif c quantity take-off and pricing of items using Cost Planning's rate libraries; ii) duplicating quantities and rates from previous estimates for sim lar works produced by Cost Planning.
The direct works costs are built-up using the following drawings and design assumptions provided by
the project team:
- General arrangement p ans for each corr dor;
- Longitudinal profiles;
- Bulk out and fill earthworks volumes;
-Schedule of structures (bridges), junct ons, retaining walls, tunnels and culverts;
-Minimum,Most likely and Maximum Construction dura ions;
-Start and end of works dates.
Using the informat on available, the estimating team a so dent fied and estimated the costs for any local access structures and demolition of any conflicted commercial/ residential bui dings. Th s estimate assumes that there s asbestos within the commercial/residential bui dings being demolished. Therefore a lowances for the d sposal of hazardous materials are included within the cost estimate.
In assuring the cost estimates are suitable or use by the project team, the costs have been benchmarked against similar schemes in scope and complexity. When compared against the estimated cos s for the Oxford to Cambridge study, the A66 Northern Trans Pennine Project and the Manchester
North West Quadrant schemes the costs for this study converged we l.
Addit onal R sk has been added at this stage due to the scheme complexity.

Approval

Cost Engineer	*Signed* [redacted]	*Name* [redacted]	*Date:* 18.03.2020
Confirmation that the estimate has been produced in accordance with the k P Cost Estimation Manual and any other relevant guidance. **Estimating Manager**	*Signed* [redacted]	*Name* [redacted]	*Date:* 25/03/2020
Confirmation estimate ref ects information prov ded and will be reported cons stently. **Project Manager**	*Signed* [redacted]	*Name* [redacted]	*Date:* 25/03/20
Confirmation for estimate release. **Head of Cost Planning**	*Signed* [redacted]	*Name* [redacted] a	*Date:* 25/03/2020