Strategic Estimating Model - Estimate Release Form

CP056 Version 1.4.0

Capital Expenditure

Scheme Details

Project Name	M6 - A1(M) - Pack V, Segment , 5 & 6C: A658 (Airport) to A6
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	17.35 Km

Category	Scope of Works
New Link Roads	New Link with a D2AP cross section for 17.35km; No.of structures: 1 viaducts, roadbridges,12 other structures such as minor road structures,private access structures,accomodation bridges and underpasses; Length of Retaining Wal s in Cut and F ll:5020m; No.of culverts:8; Demolition of commercial/residenc al buildings:29 no. Cut volumes:829,272 m3 and Fill volumes: 1, 76,33 m3.The earthworks quantities provided by the Project Team are including for topso l but excluding of capping and the new pavement box.The capping thickness assumed within es imates is 0.3m (0% proportion of capping).Earthworks Stra egy Most Likely Scenar o includes for 80%Acceptable Material other than 5A,19%Un-Acceptable Material U1A and 1% Un-Acceptable Mater al U2.Percentage of Re-use the Acceptab e Material:100% Percentage Processed for re-use Un-Acceptable Ma erial:80%.Minimum Scenario includes for 90% Acceptab e Material other than 5A,9%Un-Acceptable Material U1A and 1% Un-Acceptable Material U2.Percentage of Re-use the Acceptable Material:100%.Percentage Processed for re-use Un-Acceptable Material:100%.Maximum Scenario includes for 70% Acceptab e Material other than 5A,29%Un-Acceptab e Material U1A and 1% Un-Acceptab e Ma erial U2.Percentage of Re-use the Acceptable Mater al:100%.Percentage Processed for re-use Un-Acceptab e Material:75%.
Widening	
New Junct ons	3 no Diamond has been included within this scheme.
Junc ion Improvement	
Technology	

Base Cost Estimate & Risk (Q1 2016)

	Minimum	nterim Scheme (Mode) ML	Maximum
Base Estimate	£289,268 889.76	£607,0 0,2 9.62	£1, 62 58 ,813.3
Risk Adjustment	£1 , 63, . 9	£151,760,062. 1	£555,782,229.07
Subtotal	£303 732 334 25	£758 800 312 03	£2 018 367 642 41

Inflation and Portfolio Risk

	Minimum	nterim Scheme (Mode) ML	Maximum
Inf ation Adjustment	£117,307,168.00	£639,672,353.00	£3,1 3, 55,239.00
Portfo io Risk Adjustment	£57,256,286.00	£1 0,753,875.00	£22 , 70,752.00
RET Adjustment Subtotal	£17 ,563, 5 .00	£780, 26,228.00	£3,367 925,991.00
Estimate Out urn	£478 295 788 25	£1 539 226 540 03	£5 386 293 033 41

Summary of Proposed Scope of Works

PACK V Scope of Works ncludes Segments 4 5 & 6C as follows:
Construction Duration;
Minimum: 6 months
Most Likely: 5 months
Maximum: 90 months

Bespoke Items included such as:
Ground Improvement cons dered for 500m across Ecoup Reservoir wetland.
188 000 m2 Additional eco ogical and landscaping measures;
5.29ha Relocation of woodland.
Pumping Stat on and hydrobrakes included as advised by Project Team.
Archaeology and aftercare allowances have been added within the estimate.

Stage Dates

	Normal Start	Finish
Pre PCF	05 06/2019	30/05/2020
Stage 1	01 03/2026	31/07/2027
Stage 2	01 08/2027	31/07/2028
Stage 3	01 08/2028	31/01/2031
Stage 4	01 02/2031	29/02/2032
Stage 5	01 03/2032	31/05/2033
Stage 6	01 06/2033	31/12/2037
O (Open to raffic)		01/01/2038

Comments

Th s range estima e has been produced using an estimating approach (Strategic Estimating Mode) that is suitab e for schemes before they enter the Project Control Framework (PCF Stage 0, prior to entry to the Major Projects por folio). The maturity level of project definition is low, limited to an outline concept. Guidance from AACE recommends that for schemes of a similar 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 consider these generic percentage ranges, the gu dance provides a level of assurance around the range.
Use of SEM to produce an estimate or this scheme has been agreed w th the Project Manager In order o provide a high level order of magnitude range estimate of the scheme costs based on the SGARs prov ded by the Project Team. H ghways England Cost P anning has rev ewed the SEM model outputs against the proposed design and made top-down adjustments to better reflect the scope. However, due to the time constraints and level of detail , this approach does not consider the specific design, project and site characteristics that may be avai able. It is likely that mode (most likely) of the estimate cou d be subject to significant change once the scheme scope, design, schedule and risk basis are spec fically considered.
The es imate assumes that all works shown on the supplied design drawings, will be de ivered through a Highways England Major Projects to a de ivery programme in accordance with the SGAR dates in this form 300. These SGAR dates have been used to budget time-related costs and in lation. The estimate assumes that the scheme w ll need to complete a l of the PCF S ages including Stage 0 (Pre-Options), Opt ons and Development.
- Estimated costs for the MM-IW Series 100 project overheads and method-related costs have been based on a percentage of estimated direct works costs, in line w th schemes of a similar value and scope from cost intelligence da a on histor c Highways Eng and schemes.
- The range app ied o the direct works represents the expected varia on of scope and delivery from the most likely pos tion. It does not consider the construction and delivery of an a ternative solut on to that proposed by the project team.
- His orical costs are included with the estimate as spend to date 19 02/2020 and it has been provided by the Project Manager.
- Lands and Statutory Undertakers costs are derived from top-down mett ce within the SEM and D strict Valuer / Third-party lands cost estimates have not been considered.
Es imated lands and SU cos s are therefore based on historical norms from histor c Highways Eng and schemes.
- Unscheduled Item A lowance, Project spec fic r sks, Uncertainties and Portfol o Risk allowances are estimated based on a proport on of the base estimate. Th s is al gned to HM Treasury Green Book supplementary guidance.
In lation allowance included in the estimate is based on the la est agreed inflation profile .
Where the proposed scheme includes works where the SEM approach is not cons dered sui able, other estimating methods have been used, including: I) spec fic quant ty take-off and pricing of items using Cost Planning's rate librar es; i) dup ica ing quanti ies and rates from prev ous estimates for similar works produced by Cost Planning.
The direct works costs are bui t-up using the fo lowing drawings and design assumptions provided by
the project team:
- General arrangement plans for each corridor;
- Longitudinal profi es;
- Bulk cut and ill earthworks volumes;
-Schedu e of structures (bridges), junctions, retaining walls, tunnels and culverts;
-Minimum,Most likely and Maximum Construction durations;
-Start and end of works dates.
Using the information ava lab e, the estimating team also identified and estimated the costs for any local access structures and demol tion of any conf icted commercial/ residential buildings.This estimate assumes that there is asbestos w thin the commercial/residential buildings being demo ished. Therefore allowances for the disposal of hazardous materia s are included within the cost estimate.
In assuring the cost estimates are su table for use by the project team, the costs have been benchmarked against simi ar schemes in scope and complexity. When compared against the estimated costs for the Oxford to Cambridge study, the A66 Northern Trans Pennine Project and the Manchester
North West Quadrant schemes the costs for th s study converged well.
Additional Risk has been added at this stage due to the scheme complex ty.

Approval

Cost Engineer	Signed [redacted]	Name [redacted]	Date: 18.03.2020
Confirmation that the estimate has been produced in accordance w th the MP Cost Est [redacted] other relevant guidance. **Estimating Manager**	Signed [redacted]	Name [redacted]	Date: 25/03/2020
Confirmation estimate reflects informat on provided and w ll 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]	Date: 25/03/2020