Strategic Estimating Model - Estimate Release Form

CP056 Version 1.4.0

Capital Expenditure

Scheme Details

Project Name	M6 A (M) Pack III, Segment B, 5B, 6B, 7B2 A658 (Airport) o 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	20.15 Km

Category	Scope of Works
New Link Roads	New Link w th a D2M cross section for 20.15km;Slip roads with structures when crossing A1M and t e-into A1(M)J 5. No.of structures: 8 roadbridges, 17 other structures such as minor road structures,private access structures,accomodation bridges and underpasses; Length of Re aining Walls in Cut and Fi l: 100m; No.of culverts:7; Demol tion of commerc ai/residencial bu idings:36 no. Cut volumes:96 ,371 m3 and Fill volumes: 1,625,006 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-Acceptable Material:75%.
Widening	
New Junctions	3 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	£392,833,793.72	£817,580,692.29	£1,806,090,083.00
Risk Adjustment	£19 6 1,689.69	£163,516,138. 6	£596,009,727.39
Subtotal	**£412 475 483 41**	**£981 096 830 75**	**£2 402 099 810 39**

Inflation and Portfolio Risk

	Minimum	Interim Scheme (Mode) ML	Maximum
Inf ation Adjustment	£166,3 0,692.00	£86 , 31,918.00	£3,932, 20,3 6.00
Portfo io Risk Adjustment	£75, 8,296.00	£187, 26,226.00	£306,311,28 .00
RET Adjustment Subtotal	£2 1,788,988.00	£1,051,858,1 .00	£ ,238,731,630.00
Estimate Out urn	**£654 264 471 41**	**£2 032 954 974 75**	**£6 640 831 440 39**

Summary of Proposed Scope of Works

PACK III Scope of Works Includes Segments 4B 5B 6B & 7B2 as follows:
Construction Duration;
Minimum: 57 months
Most Likely: 67 months
Maximum: 109 months

Bespoke Items included such as:
Ground Improvement considered for 500m across Ecoup Reservoir wetland.
178 000 m2 Addit onal ecological and landscaping measures;
1.76 ha Relocat on of woodland.
Pumping Stat on and hydrobraiies included as advised by Project Team.
Archaeology and aftercare allowances have been added within the estimate.

Stage Dates

	Normal Start	Normal 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	31/03/2032
Stage 5	01 0 /2032	30/06/2033
Stage 6	01 07/2033	31/01/2039
O (Open to raffic)		01/02/2039

Comments

Th s range estimate has been produced using an estimating approach (Strategic Estimating Model) that is su table for schemes before they enter the Project Control Framework (PCF Stage 0, prior to entry to the Major Projects portfolio). The maturity level of project de inition 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 wou d be -30% to 50%. Whilst th s estimate does not consider these generic percentage ranges, the gu dance provides a evel 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 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 reviewed the SEM model outputs against the proposed design and made top-down adjustments to better ref ect 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 eval able. It is likely that mode (most likely) of the estimate could be subject o significant change once the scheme scope, design, schedule and risk basis are specifically considered.
The estimate 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 th s form 300. These SGAR dates have been used to budget time-related costs and inflation. The estimate assumes that the scheme will need to complete a l of the PCF Stages including Stage 0 (Pre-Options), Op ions and Development.
- Es imated costs for the MMHAV Series 100 project overheads and method-rela ed costs have been based on a percentage of estimated direct works cos s, in line w th schemes of a simi ar value and scope from cost in ell gence da a on histor c Highways Eng and schemes.
- The range app ied to the direct works represents the expected variat on of scope and de ivery from the most likely position. It does not consider the construction and delivery of an a ternative solution to that proposed by the project team.
- Historical 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 metr cs within the SEM and District Valuer / Third-party lands cost estimates have not been considered. Estimated lands and SU costs are therefore based on historical norms from histor c Highways England schemes.
- Unscheduled Item Allowance, Project spec fic r sks, Uncer ainties and Portfo io Risk al owances are estimated based on a proport on of the base estimate. This s al gned to HM Treasury Green Book supplementary guidance.
In lation al owance 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 su table, other estimating methods have been used, including: I) specific 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 l-up using the fo lowing drawings and des gn assumptions provided by
the project team:
- General arrangement plans for each corridor;
- Longitudinal prof les;
- Bulk cut and fill earthworks volumes;
-Schedu e of structures (br dges), junctions, retaining walls 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 con licted commercial/ residential buildings.This estimate assumes that there is asbestos within the commercial/resident al buildings being demolished. Therefore allowances for the disposal of hazardous materia s are included within the cost estimate.
In assuring the cost estimates are suitab e for use by the project team, the costs have been benchmarked against sim lar schemes in scope and complexity. When compared against the estimated costs for the Oxford to Cambr dge study, the A66 Northern Trans Pennine Project and the Manchester
North West Quadrant scheme the cos s for this study converged well.

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 mation Ma [redacted] re evant guidance. **Estimat ng Manager**	[redacted]	*Name* [redacted]	*Date:* 25/03/2020
Confirmation estimate reflects informat on provided and w l be reported cons s[redacted] **Project Manager**	[redacted]	*Name*	25/03/2020
Confirmation for estima e release. **Head of Cost Planning**	*Signed* [redacted]	*Name* [redacted]	*Date:* 25/03/2020