Strategic Estimating Model - Estimate Release Form

CF056 Version 1.4.0

Capital Expenditure

Scheme Details

Project Name	M6 - A1(M) - Pack IV, Segment 4B, 5B, 6B, 7B1: 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	18. 5 Km

Category	Scope of Works
New Link Roads	New Link w th a D2M cross section for 18. 5 km including Slip roads with structures when crossing A1M and tie-into A1(M)J 5. No.of structures: 7 roadbridges,17 other structures such as m inor 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 ail/residencial bu ildings:33 no. Cut volumes:918,060 m3 and Fill volumes: 1,511,5 9 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,15%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% Acceptable Material other than 5A 9%Un-Acceptab e 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 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 Junct ons	3 no Diamond has been included within this scheme.
Junc ion Improvement	
Technology	

Base Cost Estimate & Risk (Q1 2016)

	Minimum	Interim Scheme (Mode) ML	Maximum
Base Estimate	£339,229,559.00	£709,135, 70.85	£1,628 627,210.38
Risk Adjustment	£16 961, 77.95	£1 1,827,09 .17	£537, 6,979. 3
Subtotal	**£356 191 036 95**	**£850 962 565 02**	**£2 166 074 189 81**

Inflation and Portfolio Risk

	Minimum	Interim Scheme (Mode) ML	Maximum
Inf ation Adjustment	£1 0,680,081.00	£730,103,19 .00	£3, 60 525,293.00
Portfo io Risk Adjustment	£95, 71,67 .00	£161,350,388.00	£262,910,0 1.00
RET Adjustment Subtotal	£206,151,755.00	£891, 53,582.00	£3,723, 35,33 .00
Estimate Out urn	**£562 342 791 95**	**£1 742 416 147 02**	**£5 889 509 523 81**

Summary of Proposed Scope of Works

PACK IV Scope of Works Includes Segments 4B 5B 6B & 7B1 as follows:
Construction Duration;
Minimum: 5 months
Most Likely: 6 months
Maximum: 107 months

Bespoke Items included such as:
Ground Improvement considered for 500m across Ecoup Reservoir wet and.
173 000 m2 Add tional ecolog cal and landscaping measures;
1 76 ha Relocation of woodland.
Pumping Station and hydrobrakes included as advised by Project Team.
Archaeo ogy and a tercare allowances have been added within the es imate.

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	30/07/2028
Stage 3	01/08/2028	31/01/2031
Stage 4	01/02/2031	28/02/2032
Stage 5	01/03/2032	31/05/2033
Stage 6	01/06/2033	30/09/2038
O (Open to raffic)		01/10/2038

Comments

This range estimate has been produced using an estimating approach (Strateg c Estimating Model) that is suitable for schemes before they enter the Project Control Framework (PCF Stage 0, pr or to entry to the Major Projects portfol o). The maturity level of project defin tion s low, limited to an outline concept. Guidance from AACE recommends that or schemes of a sim ar stage of des gn and matur ty an expec ed range of accuracy around the most likely value would be -30% to 50%. Wh lst this estimate does not consider these generic percentage ranges, the guidance provides a level of assurance around the range.
Use of SEM to produce an estimate for th s 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 provided by the Project Team. Highways England Cost Planning has reviewed 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 data l , this approach does not consider the specif c design, project and s te characterist cs that may be availab e. It s likely that mode (most likely) of the estima e could be subject to sign icant change once the scheme scope, design, schedule and risk basis are specifically considered.
The estimate assumes that all works shown on the suppl ed design drawings, will be delivered through a H ghways England Major Projects to a delivery programme in accordance wth the SGAR dates in thle form 300. These SGAR dates have been used to budget time-rela ed costs and inflat on. The estimate assumes that the scheme will need to complete all of the PCF Stages including Stage 0 (Pre-Options), Options and Deve opment.
- Estimated costs for the MMHW 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 sim lar value and scope from cost intel igence data on historic Highways England schemes.
- The range applied to the direct works represents the expected variation of scope and delivery from the most likely position. It does not consider the construct on and de ivery of an alternative solution to that proposed by the project team.
- H storical 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 op-down metrics w thin the SEM and Distr ct Valuer / Third-party lands cost estimates have not been cons dered. Estimated lands and SU costs are therefore based on h storical norms from historic Highways England schemes.
- Unscheduled Item Allowance, Project specific risks, Uncertainties and Portfolio Risk a lowances are es imated based on a proportion of the base estimate. This is a ligned to HM Treasury Green Book supplementary gu dance.
Inflat on a lowance included in the estimate is based on the atest agreed inf ation profl e .
Where the proposed scheme includes works where the SEM approach is not considered suitab e, other estimating methods have been used, including: i) specific quantity take-off and pr cing of items using Cost Planning's ra e libraries; ii) duplicating quan ities and rates from previous es imates for sim ar works produced by Cost Planning.
The direct works costs are built-up using the ollowing drawings and design assumptions provided by the project team:
- General arrangement p ans or each corridor;
- Longitudinal profiles;
- Bulk out and fill earthworks volumes;
-Schedule of structures (bridges), junctions, retaining walls, tunnels and culverts;
-Minimum,Most likely and Maximum Construction durat ons;
-Start and end of works dates.
Using the information available, the estimating team also identi ied and estima ed the costs for any ocal access structures and demo tion of any conflicted commercial/ res dent al bui dings.This es imate assumes that there s asbestos within the commercial/residential buildings being demolished. Therefore al owances for the disposal of hazardous mater als are included within the cost estimate.
In assuring the cost estimates are suitable for use by the project team, the costs have been benchmarked against similar schemes in scope and complex ty. 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 this study converged well.

Approval

Cost Engineer
Signed [redacted] Name [redacted] Date: 18.03.2020

Confirmat on that the estimate has been produced in accordance with the MP C ist Estimat of Manua and any other relevant guidance.
Estimating Manager
Signed [redacted] Name [redacted] Date: 25/03/2020

Confirmat on estimate reflects information prov ded and will be re orted in accordanc
Project Manager
Si [redacted] Name [redacted] Date: 25/03/2020

Confirmat on for estimate re ease.
Head of Cost Planning
[redacted] Name [redacted] Date: 25/03/2020