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 D2M cross sect on for 17.35m; 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:911,723 m3 and Fill volumes: 1,623,121 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 Material U2.Percentage of Re-use the Acceptable Material:100%.Percentage Processed for re-use Un-Acceptable Material:75%.
Widening	
New Junct ons	3no 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	£310,836 808.25	£657,380,683.63	£1 5 ,9 7, 37.16
Risk Adjustment	£15,5 1,8 0. 1	£16 ,3 5,170.91	£587,080,026.12
Subtotal	**£326 378 648 67**	**£821 725 854 53**	**£2 132 027 463 28**

Inflation and Portfolio Risk

	Minimum	nterim Scheme (Mode) ML	Maximum
Inf ation Adjustment	£126, 91 876.00	£695, 36,873.00	£3 323,157,182.00
Portfo io Risk Adjustment	£62,867,1 0.00	£15 ,2 1,803.00	£2 6,322, 87.00
RET Adjustment Subtotal	£189,359 016.00	£8 9,678,676.00	£3 569, 79,669.00
Estimate Out urn	**£515 737 664 67**	**£1 671 404 530 53**	**£5 701 507 132 28**

Summary of Proposed Scope of Works

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

Bespoke Items Inc uded such as:
Ground Improvement considered for 500m across Eccup Reservoir wetland.
188 000 m2 Addit onal eco ogical and landscaping measures;
5.29ha Re oca ion of woodland.
Pumping Station and hydrobrakes included as advised by Project Team.
Archaeo ogy and aftercare allowances have been added within the estimate.

Stage Dates

Normal

	Start	F nish
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	28/02/2032
Stage 5	01/03/2032	31/05/2033
Stage 6	01/06/2033	31/12/2037
O (Open to raffic)		01/01/2038

Comments

his 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, imited to an outline concept. Guidance from AACE recommends that or chemes of a simi 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 enerlc 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 osts 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 djustments to better reflect the scope. However, due to the time constraints and level of deta l , this approach does not consider the specif c design, project and s te characterist cs hat may be availab e. It s likely that mode (most ikely) of the estima e could be subject to signi icant change once the scheme scope, design, schedule and risk basis are pecifically considered.
he 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 with the SGAR dates in this form 300. These SGAR dates have been used to budget time-related costs and inflat on. The estimate assumes that the scheme will need to complete ll of the PCF Stages including Stage 0 (Pre-Options), Options and Deve opment.
Estimated costs for the MM-HW 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 im 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 lternative solution to that proposed by the project team.
- H storical costs are included with the estimate as spent o 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. stimated 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 igned to HM reasury Green Book supplementary gu dance.
nflat on a lowance included in the estimate is based on the atest agreed inf ation profi 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 nd pr cing of items using Cost Planning's ra e libraries; ii) duplicating quan ities and rates from previous es imates for simi ar works produced by Cost Planning.
he direct works costs are built-up using the ollowing drawings and design assumptions provided by
he project team:
General arrangement p ans or each corridor;
Longitudinal profiles;
Bulk cut and fill earthworks volumes;
Schedule of structures (bridges), junctions, retaining walls, tunnels and culverts;
Minimum,Most ikely 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 re included within the cost estimate.
n 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 he 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.
Additional Risk has been added at this stage due to the scheme complexity.

Approval

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

Confirmat on that the estimate has been produced in accordance with the MP Co ut Estimating Manual and by other relevant guidance.
stimating Manager
Signed [redacted] *Name* [redacted] *Date:* 25/03/2020

Confirmat on estimate reflects information prov ded and will be report [redacted]
Project Manager
Signe [redacted] *Name* 25/03/2020

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