Strategic Estimating Model - Estimate Release Form

CP034 Version 1.4.0

Capital Expenditure

Scheme Details

Project Name	M6 - A1(M) - Pack 1, Segment 1: A629 Skipton to New Jcn with A658 (Airport)
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	19.6 Km

Category	Scope of Works
New Link Roads	New Link with a D2AP cross section for 19.6km; No.of structures: 2 viaducts,1 riverunderbridge, 5 roadbridges,13 other structures such as minor road structures,private access structures,accomoda ion br dges and underpasses; Length of Retaining Wal s in Cut and F lt: 08 m; No.of culverts:20; Demolition of commercial/residenc al buildings:18 no. Cut volumes:1,256,360 m3 and Fill volumes: 8 ,933 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 Junct ons	1 no Diamond has been included within this scheme. 1 no Ha f C over eaf has been included within th s scheme.
Junc ion Improvement	
Technology	

Base Cost Estimate & Risk (Q1 2016)

	Minimum	nterim Scheme (Mode) ML	Maximum
Base Estimate	£ 88,980,976.01	£9 8,097,567.5	£1,856, 82,367.58
Risk Adjustment	£2 , 9,0 8.80	£237,02 ,391.88	£705, 63 299.68
Subtotal	**£513 430 024 81**	**£1 185 121 959 42**	**£2 561 945 667 26**

Inflation and Portfolio Risk

	Minimum	nterim Scheme (Mode) ML	Maximum
Inf ation Adjustment	£15 ,713,653.00	£729,027,672.00	£2,810,816,2 5.00
Portfo io Risk Adjustment	£81,3 6,106.00	£187,86 ,531.00	£278,1 5 235.00
RET Adjustment Subtotal	£236,059,759.00	£916,892,203.00	£3,088,961, 80.00
Estimate Out urn	**£749 489 783 81**	**£2 102 014 162 42**	**£5 650 907 147 26**

Summary of Proposed Scope of Works

PACK I Scope of Works includes Segment 1 as follows:
Construction Duration;
Minimum:52 months
Most Likely:66 months
Maximum:102 months

Bespoke Items included such as:
Ground Improvement considered or 1000m across Barrowford Reservoir Area.
.00 000m2 of Addit onal ecological and landscaping measures;
2.82 ha Relocation of wood and;
1 Coal mining ho e to be grou ed in proximity of Skipton area,NewC ose H ll.
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	01/01/2021	31/05/2022
Stage 2	01/06/2022	31/05/2023
Stage 3	01/06/2023	30/11/2025
Stage 4	01/12/2025	31/12/2026
Stage 5	01/01/2027	30/0 /2028
Stage 6	01/05/2028	31/10/2033
O (Open to raffic)		01/11/2033

Comments

Th s range estimate 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 port olio). The maturity evel of project definition is low, lim ted o an outline concept. Gu dance 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 to prov de a high evel order of magnitude range es imate 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 aval 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, w ll 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 MMHW 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 data on h stor c Highways Eng and schemes.
- The range app ied o the direct works represents the expected variat 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 ds within the SEM and D stict Valuer / Third-party lands cost estimates have not been considered. Estimated lands and SU cos s are therefore based on historical norms from h stor c Highways Eng and schemes.
- Unscheduled Item A lowance, Project spec fic risks, 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 latest agreed infla ion profile .
Where the proposed scheme includes works where the SEM approach is not cons dered suitable, other estimating methods have been used, including: I) spec fic quant ty take-off and pricing of items using Cost Planning's rate libraries; ii) dupl cating quantities and rates from previous estimates for sim lar works produced by Cost Planning.
The direct works costs are bul t-up using the fol owing drawings and design assump ions prov ded by
the project team:
- General arrangement plans for each corridor;
- Longitudinal profiles;
- Bulk cut and f ll earthworks volumes;
-Schedu e of structures (bridges), junctions, retaining wa ls and culverts;
-Minimum,Most likely and Maximum Construction durations;
-Start and end of works dates.
Using the information ava lable, 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 bu ldings being demo ished. Therefore allowances for the disposal of hazardous materi a s are included w thin the cost estimate.
In assuring the cost estimates are su table for use by the project team, the costs have been benchmarked against sim ar schemes in scope and complexity. When compared against the es imated 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.
Add tional Risk 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 w th the MP Cost Estimat on Manual and any other relevant guidance. **Estimating Manager**	*Signed* [redacted]	*Name* [redacted]	27/03/2020 *Date:*
Confirmation estimate reflects informat on provided and w ll be reported consistently. **Project Manager**	*Signed* [redacted]	*Name* [redacted]	*Date:* 27/03/20
Confirmation for estimate release. **Head of Cost Planning**	*Signed* [redacted]	*Name* [redacted]	*Date:* 27/03/2020