# Strategic Estimating Model - Estimate Release Form

CP056 Version 1.4.0

## Capital Expenditure

### Scheme Details

| | |
|---|---|
| Project Name | M6 A (M) Pack I , Segment 4B, 5B, 6B & 7B Abbot (Airport) to A6 |
| Type of Estima e Requested | Strategic Estimate |
| Estimate Identif cat on Number | 1125 |
| Type of Project | New Construction |
| Primary C ass fication 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 with a D2AP cross section for 18. 5 km including Slip roads w th structures when crossing A1M and tie-into A1(M)J 5.<br>No.of structures: 7 roadbridges,17 other structures such as minor road structures,priva e access structures,accomodat on bridges and underpasses;<br>Length of Retaining Wa ls in Cut and Fill: 100m;<br>No.of culverts:7;<br>Demolit on of commercial/res dencial buildings:33 no.<br>Cut volumes:835,035 m3 and Fil volumes: 1,37 ,852 m3.The earthworks quantit es provided by the Project Team are including for topso l but excluding of capping and the new pavement box.The capping thickness assumed within estimates is 0.3m ( 0% proport on of capping).Earthworks Strategy:Most Likely Scenario includes for 80%Acceptable Material other than 5A,19%Un-Acceptab e Material U1A and 1% Un-Acceptable Material U2.Percentage of Re-use the Acceptable Material:100%.Percentage Processed for re-use Un-Acceptab e Material:80% Minimum Scenario includes for 90% Acceptable Material other than 5A.9%Un-Acceptab e Material U1A and 1% Un-Acceptable Material U2.Percentage of Re-use the Acceptab e Material:100%.Percentage Processed for re-use Un-Acceptable Material:100%.Maximum Scenario includes for 70% Acceptab e Material other than 5A.29%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:75%. |
| Widening | |
| New Junct ons | 3 no Diamond has been included within th s scheme. |
| Junc ion Improvement | |
| Technology | |

### Base Cost Estimate & Risk (Q1 2016)

| | Minimum | In erim Scheme (Mode) ML | Maximum |
|---|---|---|---|
| Base Estimate | £317,522,590.07 | £671,082,36 .91 | £1,563,6 7,01 77 |
| Risk Adjustment | £15 876,129.50 | £13 ,216, 72.98 | £516,003,51 .87 |
| **Subtotal** | **£333 398 719 57** | **£805 298 837 89** | **£2 079 650 529 65** |

### Inflation and Portfolio Risk

| | Minimum | In erim Scheme (Mode) ML | Maximum |
|---|---|---|---|
| Inf ation Adjustment | £131,29 ,035.00 | £690,057,625.00 | £3,325,337,969 00 |
| Portfol o Risk Adjustment | £61 0 2,977.00 | £150,888,320.00 | £2 5,5 6,080.00 |
| RET Adjustment Subtotal | £192,337,012.00 | £8 0,9 5,9 5.00 | £3,570,88 ,0 9 00 |
| **Estimate Out urn** | **£525 735 731 57** | **£1 646 244 782 89** | **£5 650 534 578 65** |

### Summary of Proposed Scope of Works

**PACK IV Scope of Works Includes Segments 4B 5B 6B & 7B1 as fo lows:**
Construction Durat on;
Minimum: 5 months
Most Likely: 6 months
Maximum: 107 months

**Bespoke Items included such as:**
Ground Improvement considered for 500m across Ecoup Reservoir wetland.
173 000 m2 Additional ecological and landscaping measures;
1.76 ha Relocation of wood and.
Pumping Station and hydrobrakes included as adv sed by Project Team.
Archaeology and aftercare al owances have been added w thin 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 | 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 estima ing approach (Strateg c Es imating Model) that is sul able for schemes before they enter the Project Control Framework (PCF Stage 0, prior to entry to the Major Projects portfo io). The matur ty level of project definition is low, imited to an out ine 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 es imate 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 for this scheme has been agreed with the Project Manager in order to provide a h gh level order of magn tude 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 des gn 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 character stics 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 specif cally cons dered.
The estimate assumes that all works shown on the supplied des gn drawings, wi l be delivered through a Highways Eng and 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 inflation. The estimate assumes that the scheme will need to complete a l of the PCF Stages including Stage 0 (Pre-Options), Options and Development.
- Estimated costs for the MM-W 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 var ation of scope and delivery from the most likely posit on. It does not cons der the construction and delivery of an alterna ive solution to that proposed by the project team.
- H stor cal costs are included w th the estimate as spend o date 19/02/2020 and t has been prov ded by the Project Manager.
- Lands and Statutory Undertakers costs are derived from top-down metrics within the SEM and District Valuer / Third-party lands cost estimates have not been cons dered. Estimated ands and SU costs are therefore based on histor cal norms from historic H ghways England schemes.
- Unachedu ed I em Allowance, Project specif c risks, Uncertainties and Por folio Risk allowances are estimated based on a proportion of the base estimate. This is aligned to HM Treasury Green Book supp ementary guidance.
Inflation allowance included in the estimate s based on the latest agreed inflation prof le .
Where the proposed scheme includes works where the SEM approach s not considered suitab e, other estimating methods have been used, including: I) specif c quantity take-off and pricing of items using Cost Planning s rate libraries, II) duplicating quantities and rates from previous estimates for similar works produced by Cost Planning.
The direct works costs are built-up using the following drawings and design assumptions provided by
the project team:
- General arrangement p ans for each corr dor;
- Longitudinal profiles;
- Bulk cut and fill earthworks volumes;
-Schedule of structures (bridges), junct ons, retaining walls, tunnels and culverts;
-Minimum, Most likely and Maximum Construction dura ions;
-Start and end of works dates.
Using the informat on available, the estimating team a so dent fied and estimated the costs for any local access structures and demolition of any conflicted commercial/ res dent al 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 materials are included within the cost es imate.
In assuring the cost estimates are suitable or use by the project team, the costs have been benchmarked against similar 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 this study converged we l.

### Approval

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|---|---|---|---|
| **Cost Engineer** | Signed [redacted] | Name [redacted] | Date: 18.03.2020 |
| Confirmation that the estimate has been produced in accordance with the MP Cost Planning Manual and any other relevant guidance.<br>**Estimating Manager** | Signed [redacted] | Name [redacted] | Date: 25/03/2020 |
| Confirmation estimate ref ects information prov ded and will be reported c [redacted]<br>**Project Manager** | Signed [redacted] | Name [redacted] | Date: 25/03/20 |
| Confirmation for estimate release.<br>**Head of Cost Planning** | Signed [redacted] | Name [redacted] | Date: 25/03/2020 |