Appendix Q – Whole Life Cost Model & Instructions

A financial assessment of bids will be made on a whole life, rather than first cost, basis. Evaluation will consider the cost of owning and operating the units, and will allow the full project costs to be evaluated, thus allowing Bidders to offset initial capital costs with future savings where this is appropriate.

To produce this assessment, Bidders are required to complete the Whole Life Cost Model proformas, which will automatically calculate the present value of initial and all future costs. Detailed instructions on the use of the Whole Life Cost Model are provided in the relevant proformas. The bidder should input details of its bid in the "WLC Model Inputs" proforma.

The Department will review all inputs to the Whole Life Cost Model and make appropriate adjustments.

The following table summarises the key assumptions in the Whole Life Cost Model. For further detail, please refer to the relevant Proformas.

Whole life cost model assumptions	Base Proposal reference
General	
a. The bidder should input cash flows from 1 July 2017 to 30 September 2046	
b. Where appropriate, the bidder should input information in semi-annual periods	
c. All inputs should be stated in 1 April 2010 prices	
d. Real Discount rate for calculating the NPV of payments is 3.5%	
e. Assumed inflation for deflating the NPV of payments to the base date for NPV payments is 2.70%	
f. The base date for the NPV of payments is 1 April 2010	
g. The annual effective inflation rate (RPI) is assumed to be 2.70%.	

Lease Rental Payments	
a. Lease Rental Payments should cross-reference Proforma L – 2.	
b. Lease Rental Payments after the end of the Usage Guarantee Period should assume the same Lease Rental and Fleet as during the Usage Guarantee Period	

Total Depot Costs	
a. Depot Lease Payments should cross-reference Proforma D – 2	
b. Depot Residual Value should be calculated at 31 March 2045 on the basis of the methodology provided in the Whole Life Cost Model Proformas.	
c. The Department will calculate an appropriate Network Rail Lease Value	

TSA Costs	
a. Service Payments should be input in 1 April 2010 prices and cross-reference Proforma TSA – 2	
b. Inflation will be applied to these costs at RPI	

Energy Consumption	
a. Bidders should calculate energy consumption per Unit Mile for each type of unit on the basis of simulated test runs	
b. Bidders should calculate energy regeneration per Unit Mile for each type of unit on the basis of simulated test runs	
c. The following assumed duty miles for each unit type are used to calculate the total annual power consumption: – Type 1 Units: 9,961,244 miles per annum – Type 2 Units: 8,830,515 miles per annum	
d. Bidders should calculate energy consumption for overnight stabling	
e. Assumed cost and credit per kilowatt hour in 1 April 2010 prices are: – Power consumption: 10 p – Power regeneration: 10 p	

f. Power consumption costs are indexed at RPI + 1%	

VTISM	
a. Bidders should use Rail Safety & Standards Board's VTISM model to calculate a variable per mile track charge for each unit type.	
b. The following assumed duty miles for each unit type are used to calculate the total annual variable track charges: – Type 1 Units: 9,961,244 miles per annum – Type 2 Units: 8,830,515 miles per annum	
c. Variable Track charges are indexed at RPI	

Performance	
a. Bidders are required to input the total minutes delay per unit for each unit type into the model.	
b. The following penalties will be applied for each delay minute in 1 April 2010 prices: – Type 1 Units: £ 800 – Type 2 Units: £ 800	
c. Performance Penalties are indexed at RPI	

Programme	
a. Bidders should specify the number of unit months by which delivery will be delayed in each semi-annual period	
b. A penalty of £12,000,000 will be applied for each Unit 1 month of delay in 1 April 2010 prices.	
c. A penalty of £8,000,000 will be applied for each Unit 2 month of delay in 1 April 2010 prices.	
d. Programme Penalties are indexed at RPI	

Risk Adjustment	
a. To the extent that: – a Bidder has indicated in commercial	

propositions or its response to the TRSP Agreements in accordance with Section 2.7.4 (Non-Acceptance Statements and mark-up of TRSP Agreements), that there will be additional costs in accepting the risks and liabilities allocated to the Bidders; or – the Department has, as described in Section 2.7.4, allocated costs to the change in risk allocation and liability as proposed by a Bidder, the Department will adjust the Bidders' cost models to include the relevant costs.	

Miscellaneous Items	
a. Bidders are permitted to add in any costs (regular or one-off) into these cells which they consider material to their bids. Bidders are required to provide an explanation for any miscellaneous items.	
b. Bidders should supply details of: a. The Owner's costs of shrinking back the MSA; b. The TMM's revised Service Payments and costs of shrinking back the TSA. For evaluation purposes, when carrying out the Stage 4 – Value Assessment the Department will apply a weighting of 20% to the scenario where TRSP shrinks back to Batch 1 only, with consequent adjustments to the Whole Life Cost Model. The Department has incorporated two worksheets into the WLC Model – "WLC Model Inputs (Addendum)" and "WLC Model Calcs (Addendum)" to facilitate the inclusion of this information. The inputs and calculations from these worksheets feed into the "WLC Model Results" worksheet in cell D14.	