Department for Transport

Intercity Express Programme

ITT Appendix C: Added Value Monetary Values

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1 Introduction

Appendix C of the ITT discusses the assessment of added value which will form part of the Value assessment of bids (see Section 3.5.4 of the ITT).

The business case for IEP is based on a “reference train” which meets, but does not exceed, the essential requirements in the TTS.

A bid which meets, but does not exceed, the essential requirements in the TTS will receive a zero added value adjustment.

DfT may accept a Bidder’s technical solution which varies from these essential requirements. For some of the essential requirements, the extent to which Bidders exceed or fall short of the requirement will be reflected in an added value adjustment to the bid price as set out below.

Whilst the TTS includes some system *inputs* (such as weight and acceleration) as essential requirements, added value will be assessed on the basis of whole-life whole-industry *outputs*. These will often be a function of more than one input.

The methodology and parameters which will be used to evaluate added value are consistent with those used in the business case. In the tables that follow, the estimates of added value are expressed (in £million) as a discounted sum over a 30 year asset life. Interpolation (and, potentially, extrapolation) of these values will be carried out as necessary to reflect actual bid values.

This document provides the added value adjustments to the bid price for each of the Core Routes and Priced Options. These adjustments reflect incremental impacts of the outputs compared with what would be achieved by the reference train.

2 Seating and Standing Capacity

The base (reference train) capacities for the valuation of seating and standing capacity are as follows.

Train type	Interior scenario	Seats	Standing	Standing/ seat ratio
Type 1: Self-powered, Full length	Interurban	568	662	1.17
Type 2: Bimode, Full length	Intercity	598	724	1.21
Type 3: Electric, Half length	Commuter	370	375	1.01
Type 4: Bimode, Half length	Commuter	302	313	1.04
Type 5: Electric, Full length	Intercity	639	806	1.26

Bidders should provide numbers of seats and standing passengers for their train designs as requested in ITT Appendix A Annex I. Standing passenger numbers should be calculated on the basis of Crush Laden Load as defined in the TTS. Each train type will be valued according to the incremental seated and standing capacity it provides, relative to that provided by the reference train. Monetary valuations for positive and negative variations from the reference train will be interpolated/extrapolated from the values set out for each of the routes in the following tables.

Values are for the full sub-fleet on the relevant route, they are not per train values.

Bidders should note the differential scales for incremental seats depending on whether the train is full or half length.

2.1 East Coast Main Line (Phase 1)

Type 2: Bimode, Full Length, Intercity

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-20**	-22.5	-22.4	-22.3	-22.3	-22.2
	-10	-11.3	-11.2	-11.2	-11.1	-11.0
	0	-0.1	-0.1	0.0	0.0	0.1
	10	9.3	9.3	9.4	9.4	9.5
	20	18.7	18.7	18.8	18.8	18.9

Type 3: Electric, Half Length, Commuter

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-10**	-13.4	-12.8	-12.2	-11.6	-11.1
	-5	-7.3	-6.7	-6.1	-5.5	-5.0
	0	-1.2	-0.6	0.0	0.5	1.0
	5	4.5	5.1	5.7	6.2	6.7
	10	10.1	10.7	11.4	11.9	12.4

Type 4: Bimode, Half Length, Commuter

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-10**	-7.0	-6.5	-6.1	-5.7	-5.3
	-5	-3.9	-3.5	-3.0	-2.6	-2.2
	0	-0.9	-0.5	0.0	0.4	0.8
	5	1.8	2.3	2.7	3.1	3.5
	10	4.6	5.0	5.5	5.9	6.2

Type 5: Electric, Full Length, Intercity

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-20**	-22.9	-22.8	-22.7	-22.6	-22.5
	-10	-11.5	-11.4	-11.4	-11.3	-11.2
	0	-0.1	-0.1	0.0	0.1	0.1
	10	9.3	9.4	9.5	9.5	9.6
	20	18.8	18.9	19.0	19.0	19.1

2.2 East Coast Main Line (Phase 2)

Type 3: Electric, Half Length, Commuter

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-10**	-33.6	-27.8	-21.9	-16.3	-10.7
	-5	-22.7	-16.8	-10.9	-5.4	0.0
	0	-11.8	-5.9	0.0	5.3	10.6
	5	-1.2	4.7	10.6	15.9	21.2
	10	9.3	15.2	21.1	26.4	31.8

2.3 Great Western Main Line (Phase 1)

Type 1: Self-powered, Full Length, Interurban

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-20**	-62.8	-56.6	-50.4	-44.6	-38.8
	-10	-37.6	-31.4	-25.2	-19.4	-14.0
	0	-12.4	-6.2	0.0	5.4	10.9
	10	10.7	16.9	23.1	28.5	34.0
	20	33.7	40.0	46.2	51.6	57.0

Type 4: Bimode, Half Length, Commuter

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-10**	-70.2	-63.0	-55.7	-48.9	-42.0
	-5	-42.3	-35.1	-27.9	-21.0	-14.6
	0	-14.5	-7.2	0.0	6.4	12.8
	5	11.6	18.8	26.1	32.5	38.9
	10	37.6	44.9	52.1	58.5	65.0

2.4 West Coast Main Line (South)

Type 3: Electric, Half Length, Commuter

£ million		Standing/seat ratio compared with base				
		-10%	**-5%**	**0%**	**5%**	**10%**
Seats compared with base	**-10**	-9.1	-9.0	-8.9	-8.8	-8.6
	-5	-4.7	-4.6	-4.4	-4.3	-4.2
	0	-0.2	-0.1	0.0	0.1	0.2
	5	3.6	3.7	3.8	3.9	4.0
	10	7.4	7.5	7.7	7.8	7.9

3 Journey Times

Base journey times for some routes/stopping patterns are set out in ITT Appendix D.

Bidders should provide the station to station journey times for these routes/stopping patterns as requested in ITT Appendix A Annex II. In addition, bidders are requested to provide station to station journey times for additional routes/stopping patterns. These should be calculated on the same basis as the journey times requested in ITT Appendix A Annex II. The full list of station to station journey times required is set out in Annex A to this document: this incorporates the original list from ITT Appendix A Annex II as well as the new journey times required.

Annex A requests two sets of journey times. The first set of journey times is designed to test the full capability of the train as defined within the TTS Appendix A. The second set of journey times (including signal stops and TSRs) is designed to test the ability of the bidder's train to recover from perturbations on the route. DfT will use the first set of journey times in the journey time evaluation but reserves the right to make adjustments to reflect the risk of the inability to recover from perturbations based on assessment of the second set of journey times.

For each route, the top origin-destination passenger flows will be valued as set out in the tables below. In order to reflect the full impact on passengers on the route, the values shown include an element of scaling to cover additional passenger flows which are not included in these top flows. Values shown are for the full IE fleet operating on the route.

The incremental station to station journey times provided by bidders will be calculated by comparison with the base times. The incremental journey times will be aggregated to the origin-destination flows in the table below in a way which reflects the expected mix of stopping patterns for each origin-destination pair.

3.1 East Coast Main Line (Phase 1)

Origin – Destination Flow	**£ million per 1 minute saving**
London Kings Cross – Peterborough	21.3
London Kings Cross – Leeds	21.2
London Kings Cross – Huntingdon	15.3
London Kings Cross – Newcastle	14.2
London Kings Cross – York	14.0
London Kings Cross – Darlington	9.7

Origin – Destination Flow	£ million per 1 minute saving
London Kings Cross – Doncaster	8.5
London Kings Cross – Edinburgh	7.6
London Kings Cross - Wakefield BR	6.3
London Kings Cross - Newark BR	5.7
London Kings Cross – Grantham	5.3
London Kings Cross – Stevenage	4.9
London Kings Cross – Durham	4.1
London Kings Cross – Hull	2.3
Edinburgh – Newcastle	2.0
Newcastle – York	1.6
Edinburgh – York	1.0
London Kings Cross – Selby	0.9
London Kings Cross – Berwick On Tweed	0.8

3.2 East Coast Main Line (Phase 2)

Origin – Destination Flow	£ million per 1 minute saving
London Kings Cross - Cambridge	36.6
London Kings Cross - Kings Lynn	2.8
London Kings Cross - Ely	2.2

3.3 Great Western Main Line (Phase 1)

Origin – Destination Flow	£ million per 1 minute saving
London Paddington – Reading	60.8
London Paddington – Maidenhead	29.9
London Paddington – Didcot Parkway	16.6
London Paddington – Oxford	14.6

Origin – Destination Flow	£ million per 1 minute saving
London Paddington - Bath Spa	12.1
London Paddington - Swindon Wilts	10.4
London Paddington - Bristol Temple M	9.9
London Paddington - Bristol Parkway	9.7
London Paddington - Cardiff BR	7.7
London Paddington – Charlbury	5.2
London Paddington – Newport	2.8
London Paddington - Stroud Glos	2.7
London Paddington – Newbury	1.8
London Paddington – Swansea	1.7
London Paddington - Cheltenham Spa	1.6
London Paddington – Gloucester	1.4
London Paddington - Worcester BR	1.3
London Paddington – Hereford	0.8
London Paddington – Bridgend	0.7

3.4 West Coast Main Line (South)

Origin – Destination Flow	£ million per 1 minute saving
London Euston - Milton Keynes C	21.0
London Euston – Northampton	12.8
London Euston - Watford Junction	9.9
London Euston – Nuneaton	1.0
London Euston - Lichfield T V	0.9
London Euston - Rugby	0.7
London Euston - Tamworth	0.6
London Euston - Stafford	0.5

3.5 Speeds over 125 mile/h

The TTS says:

"It is an essential requirement that IEP trains shall have a maximum service speed of at least 125mph across all designated routes as line speed limits allow."

"It is a desirable requirement that IEP trains under electric power shall be capable of higher speeds than 125mph to allow for possible line speed upgrades or new lines with higher speed limits being available" [1]. This statement reflects a wish on the part of DfT for a 125 mile/h train design, but it also places a value on flexibility, which, in this case, is in respect of possible longer term decisions to increase line speeds on existing routes.

With regard to the desirable requirement, bidders should refer to the enhanced line speed profile attached at Annex B. This shows an enhanced line speed, based on earlier experience of over-125 mile/h operation from tests on the ECML in the 1990s with Class 91 traction. It will be seen that substantial sections of route are capable of supporting operation at over 125 mile/h with five sections (totalling 135 miles) supporting speeds in the 140 - 155 mile/h range[2].

In practice, a number of changes to the infrastructure would be required to support these speeds in day-to-day operation, including use of ETCS and changes to the OHLE. **Bidders should assume that the infrastructure is TSI-compliant and that revisions to access rights and train routings to support these revised higher speeds have been made and then provide estimates of the Kings Cross – Edinburgh, Kings Cross – Newcastle and Kings Cross – Leeds journey times (on the same basis as is required in the ITT with the existing 125 mile/h linespeed maximum) assuming that the revised line speed profile is used as far as the train performance capability will allow**[3] **.** Bidders should supply journey times assuming that an Electric Full Length set (260m) is deployed on these routes, to the same stopping patterns as specified in Annex A to this document, and to the same simulation requirements specified within the ITT and TTS Annex A. Bidders should also supply estimates of changes in annual operating costs, including maintenance and energy costs.

The IEP train requirement for the East Coast requires both electric-only sets and dual-mode trains. Bidders should note that the desirable requirement here is for trains under electric power only. Bidders are asked to set out the journey time savings that could be achieved with their bi-mode trains under the same (upward) revised line speed profile assumption.

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[1] See TTS Section 3.7 Performance

[2] In fact, much of the route shown in Annex A as being cleared for 155 mile/h was earlier cleared for 160 mile/h, but the requirement here is limited to 155 mile/h on the basis that trains are classified under EU Directives on higher speed operation as being of 'Type 1' if they are capable of speeds 190 - 250 km/h, and this should be taken as the categorization that applies to IEP rolling stock.

[3] See ITT Appendix A Annex II

The DfT will use the same analytical approach to the calculation of the benefit of the offer in respect of any savings offered by higher speed (>125 mile/h) operation on the ECML as is used for the journey time savings in the 125 mile/h case. The assessments will apply a 50% likelihood factor to the availability of the route to facilitate these speeds from an implementation date of January 1st 2022, and adjustments will be made to bid value accordingly.

There is no requirement for over 125 mile/h operation on non-electrified routes. However, bidders should note that the GWML is due for the first stage of extending its electrification under the Crossrail project and that, clearly, further electrification is possible in the period after CP4. This may permit equivalent benefits from electric operation at speeds of over 125 mile/h to be realised on this route too. Thus this desirable capability should be taken as a generic IEP issue and not one specific to the ECML.

It should be noted that bidders are not entitled to assume that any of the time savings that are made possible by the adoption of the enhanced line speed capability can be assumed to be available to meet the core bid journey time requirements.

4 Quality

The base quality score is 4%. Bidders will be evaluated on the variation from this base level by stock type on the basis of information provided as part of ITT Appendix A.

For each 1% difference from the base (i.e. a 1% difference means a total score of 3% or 5%) the following values will be applied. Values are for the full sub-fleet on the relevant route, they are not per train values.

4.1 East Coast Main Line (Phase 1)

Stock type	£ million per 1% quality improvement
Type 2: Bimode, Full length, Intercity	44.3
Type 3: Electric, Half length, Commuter	22.6
Type 4: Bimode, Half length, Commuter	14.7
Type 5: Electric, Full length, Intercity	74.8

4.2 East Coast Main Line (Phase 2)

Stock type	£ million per 1% quality improvement
Type 3: Electric, Half length, Commuter	19.8

4.3 Great Western Main Line (Phase 1)

Stock type	£ million per 1% quality improvement
Type 1: Self-powered, Full Length, Interurban	48.9
Type 4: Bimode, Half Length, Commuter	45.1

4.4 West Coast Main Line (South)

Stock type	£ million per 1% quality improvement
Type 3: Electric, Half length, Commuter	12.6

5 Energy Consumption

Bidders will be evaluated on the variation from base energy consumption by stock type as set out in the tables below. The values are given for a 1 litre per train mile or 1 kWh per train mile difference in energy consumption compared with the base and include energy costs and environmental impact (CO_2 emissions).

Bidders should provide

- Tractive energy consumption for each of the station pairs set out in Annex A to this document;
- Energy consumption for auxiliary systems as set out in TTS Annex A Table 1 Energy Consumption Scenarios. In addition bidders should are required to provide energy consumption for temperatures of $2^{O}C$ and $15^{O}C$;
- ECS mileages.

Annual energy consumption will be estimated by scaling up

- tractive energy consumption to take account of total annual mileages (including an allowance for ECS mileage)
- auxiliary power consumption to take account of total train hours (including bidders' journey times, Network Rail allowances and dwell times and an allowance for ECS moves).

This will be used to calculate the average annual energy consumption per train-mile across each sub-fleet which will be valued according to the whole-life impact in accordance with the values set out below.

Values are for the full sub-fleet on the relevant route, they are not per train values.

5.1 East Coast Main Line (Phase 1)

Stock type	**£ million per 1 litre per-train-mile change in consumption rate**	**£ million per 1 kWh per-train-mile change in consumption rate**
Type 2: Bimode, Full length, Intercity		
- Diesel mode	6.0	-
- Electric mode	-	4.1
Type 3: Electric, Half length, Commuter		4.8
Type 4: Bimode, Half length, Commuter		
- Diesel mode	2.9	-
- Electric mode	-	3.5
Type 5: Electric, Full length, Intercity	-	15.8

5.2 East Coast Main Line (Phase 2)

Stock type	£ million per 1 litre per-train-mile change in consumption rate	£ million per 1 kWh per-train-mile change in consumption rate
Type 3: Electric, Half length, Commuter	-	3.5

5.3 Great Western Main Line (Phase 1)

Stock type	£ million per 1 litre per-train-mile change in consumption rate	£ million per 1 kWh per-train-mile change in consumption rate
Type 1: Self-power, Full Length, Interurban	60.3	-
Type 4: Bimode, Half Length, Commuter	101.3	-

5.4 West Coast Main Line (South)

Stock type	£ million per 1 litre per-train-mile change in consumption rate	£ million per 1 kWh per-train-mile change in consumption rate
Type 3: Electric, Half length, Commuter	-	6.6

6 Track Wear and Tear

In ITT Section 4.3.6 bidders are requested to provide VTISM results files. The VTISM outputs will provide a value for the track wear and tear impact of each train type on the infrastructure in terms of £ per train mile.

Bidders will be evaluated on the variation from base track wear and tear by stock type as set out in the tables below. The values are given for a £0.01 difference in VTISM cost per train mile (averaged over Routes A and B) compared with the base.

Values are for the full sub-fleet on the relevant route, they are not per train values.

6.1 East Coast Main Line (Phase 1)

Stock type	**£ million per £0.01 per train mile change in VTISM cost**
Type 2: Bimode, Full length, Intercity	1.1
Type 3: Electric, Half length, Commuter	1.0
Type 4: Bimode, Half length, Commuter	0.8
Type 5: Electric, Full length, Intercity	3.4

6.2 East Coast Main Line (Phase 2)

Stock type	**£ million per £0.01 per train mile change in VTISM cost**
Type 3: Electric, Half length, Commuter	0.7

6.3 Great Western Main Line (Phase 1)

Stock type	**£ million per £0.01 per train mile change in VTISM cost**
Type 1: Self-powered, Full Length, Interurban	2.0
Type 4: Bimode, Half Length, Commuter	3.3

6.4 West Coast Main Line (South)

Stock type	**£ million per £0.01 per train mile change in VTISM cost**
Type 3: Electric, Half length, Commuter	1.4

Annex A: Updated Journey Time Proforma

This annex updates the Journey Time Proforma in ITT Appendix A Annex II. Journey times and energy consumption should be provided for each of the station-station pairs shown in the table.

Some of this information was requested in the original Journey Time Proforma in ITT Appendix A Annex II. Additional information which is required for the added value evaluation is highlighted in yellow.

Route	**IEP Train Type**	**Journey Time Requirement*** **(mins)**	**Energy Consumed (Mwh) / Fuel consumed*** **	**No. signal stops on level sections, duration 0 seconds for the speed stated below.**	**No. 30mile/h TSR's on level sections of 500m length for the speed stated below.**	**Journey Time Requirement*** **(mins)** **Including Signal Stops and TSR's**	**Energy Consumed (Mwh) / Fuel consumed*** ** **Including Signal Stops and TSR's**
Kings Cross to Edinburgh Kings Cross Peterborough York Darlington Newcastle Berwick Edinburgh	Electric Half length set (130m) or 2 sets coupled Bi-Mode Half Length set (130m) (Electric Op) Electric Full Length set (260m) Bi-Mode Full Length set (260m) (Electric Op) 2 x Bi-Mode Half Length set (130m) in multiple (Electric op)			2 (from 125mph)	2 (from 125mph)		
Kings Cross to Newcastle Kings Cross Peterborough Grantham	Electric Half length (130m) or 2 sets coupled			1 (from 125mph	2 (from 125mph)		

Newark Retford Doncaster York Northallerton Darlington Newcastle	Bi-Mode Half Length set (130m) (Electric Op) Electric Full length set (260m) Bi-Mode Full Length set (260m) (Electric Op) 2 x Bi-Mode Half Length set (130m) in multiple (Electric op)						
Additional EC Phase 1 stopping patterns Darlington - Durham Doncaster - Wakefield Westgate Durham - Newcastle Huntingdon - Peterborough London Kings X - Doncaster London Kings X - Huntingdon London Kings X - Stevenage Newark N Gate - Doncaster Peterborough - Wakefield Westgate Stevenage - Doncaster Stevenage - Peterborough Wakefield Westgate - Leeds	Electric Half length (130m) or 2 sets coupled Bi-Mode Half Length set (130m) (Electric Op) Electric Full length set (260m) Bi-Mode Full Length set (260m) (Electric Op) 2 x Bi-Mode Half Length set (130m) in multiple (Electric op)			Not required	Not required	Not required	Not required

Edinburgh to Aberdeen Edinburgh Haymarket Inverkeithing Kirkaldy Leuchars Dundee Arbroath Montrose Stonehaven Aberdeen	Bi-Mode Full Length set (260m) (Self-Power op)			1 (from 90mph)	1 (from 90mph)		
Paddington to Bristol Paddington Reading Didcot Swindon Chippenham Bath Bristol Temple Meads	Self Powered – Full length set (260m) Bi-Mode Half Length set (130m) (Self-Power op) 2 x Bi-Mode Half Length (130m) in multiple (Self-Power op)			1 (from 125mph)	2 (from 125mph)		
Swindon to Swansea Swindon Wilts Bristol Parkway Newport Gwent Cardiff Central Bridgend Port Talbot Parkway Neath Swansea Swindon to Cheltenham Swindon Kemble Stroud Stonehouse Gloucester Cheltenham Spa Other GW Phase 1 stopping patterns Reading to Bristol Parkway Reading to Swindon	Self Powered – Full length set (260m) Bi-Mode Half Length set (130m) (Self-Power op) 2 x Bi-Mode Half Length (130m) in multiple (Self-Power op)			Not required	Not required	Not required	Not required

Paddington to Bristol Parkway Bristol Parkway to Bristol TM							
Paddington to Oxford Paddington Maidenhead Reading Oxford Oxford to Hereford Oxford Handborough Charllbury Kingham Moreton In Marsh Honeybourne Evesham Pershore Worcester Shrub Hill Worcester Fgt St Malvern Link Great Malvern Colwall Ledbury Hereford Reading to Newbury Reading Theale Thatcham Newbury	Bi-Mode Half Length set (130m) (Self-Power op) 2 x Bi-Mode Half Length (130m) in multiple (Self-Power op)			Not required	Not required	Not required	Not required
Edinburgh to Plymouth Edinburgh Waverley Newcastle Durham Darlington York Leeds Wakefield Westgate Sheffield Derby Birmingham New St Cheltenham Spa Bristol Parkway Bristol Temple Meads Taunton	Bi-Mode Intermediate Length set (c 210m); Electric where 25KV available, self powered elsewhere.			1 (from 125mph on Electric) plus 1 (from 125mph on Self Power)	1 (from 125mph on Electric) plus 1 (from 125mph on Self Power)		

Tiverton Parkway Exeter St Davids Newton Abbot Totnes Plymouth							
Edinburgh to Inverness Edinburgh Haymarket Falkirk Grahamston Stirling Gleneagles Perth Pitlochry Kingussie Aviemore Inverness	Bi-Mode Full Length set (260m) (Self-Powered op)			1 (from 90mph)	1 (from 90mph)		
Doncaster to Hull ** Doncaster Selby Brough Hull	Bi-Mode Half Length Set (130m) (Electric Op as far as the Electrification extends to Temple Hirst)			0	0		
ECML Phase 2 London Kings X Cambridge Waterbeach Ely Littleport Downham Market Watlington Kings Lynn	Electric Half length (130m) or 2 sets coupled			Not required	Not required	Not required	Not required
WCML South London Euston Milton Keynes Northampton Rugby Nuneaton Tamworth Lichfield Trent Valley Stafford Stoke-on-Trent Macclesfield Stockport Manchester Piccadilly London Euston Watford Junction Milton Keynes	Electric Half length (130m) or 2 sets coupled			Not required	Not required	Not required	Not required

Annex B: Enhanced Line Speed Profile Kings Cross-Darlington

From	M	Ch	To	M	Ch	Length (Miles)	Existing Speed (mph)	Higher Speed (mph)
Kings X (head of pfm)	0	12	in Gasworks Tunnel	0	30	0.225	15	n/c
in Gasworks Tunnel	0	30	in Copenhagen Tunnel	0	65	0.438	45	n/c
in Copenhagen Tunnel	0	65	Holloway	1	40	0.688	65	n/c
Holloway	1	40	Finsbury Park	2	28	0.850	80	n/c
Finsbury Park	2	28	Harringay	3	37	1.113	90	n/c
Harringay	3	37	N end Wood Grn Tunnel	5	76	2.488	95	n/c
N end Wood Grn Tunnel	5	76	Oakleigh Park	7	73	1.963	100	n/c
Oakleigh Park	7	73	Woolmer Green	23	15	15.275	115	n/c
Woolmer Green	**23**	**15**	**Offord curves S**	**54**	**46**	**31.388**	**125**	**140**
Offord curves S	54	46	Offord curves N	56	17	1.638	120	n/c
Offord curves N	56	17	Holme LC	69	30	13.163	125	n/c
Holme LC	69	30	MP 71 Stilton Fen	71	0	1.625	105	n/c
MP 71 Stilton Fen	71	0	MP 72	72	0	1.000	100	n/c
MP 72	72	0	nr Fletton	75	24	3.300	115	n/c
nr Fletton	75	24	Peterborough	76	29	1.063	105	n/c
Peterborough	76	29	76m70ch	76	70	0.513	115	n/c
76m70ch	76	70	New England	78	6	1.200	125	n/c
New England	**78**	**6**	**Stoke Tunnel South**	**100**	**39**	**22.413**	**125**	**140**
Stoke Tunnel South	100	39	Grantham	105	27	4.850	115	n/c
Grantham	105	27	105m77ch	105	77	0.625	100	n/c
105m77ch	105	77	Peascliff Tunnel North	108	32	2.438	115	n/c
Peascliff Tunnel North	108	32	Barkston	109	56	1.300	125	n/c
Barkston	**109**	**56**	**Newark Crossing**	**120**	**63**	**11.088**	**125**	**140**
Newark Crossing	**120**	**63**	**N of Newark Crossing**	**121**	**0**	**0.213**	**100**	**140**
N of Newark Crossing	**121**	**0**	**Egmanton**	**130**	**29**	**9.363**	**125**	**140**
Egmanton	130	29	Askham Tunnel North	134	40	4.137	125	n/c
Askham Tunnel North	134	40	Grove Road GSP	136	29	1.863	115	n/c
Grove Road GSP	136	29	Retford	138	27	1.975	120	n/c
Retford	138	27	Bawtry Curve South	146	71	8.550	125	n/c
Bawtry Curve South	146	71	Bawtry Curve North	148	39	1.600	110	n/c

From	M	Ch	To	M	Ch	Length (Miles)	Existing Speed (mph)	Higher Speed (mph)
Bawtry Curve North	148	39	Belmont Yds 154m38ch	154	38	5.987	125	n/c
Belmont Yds 154m38ch	154	38	Belmont Yds 155m25ch	155	25	0.838	120	n/c
Belmont Yds 155m25ch	155	25	Doncaster 156m53ch	156	53	1.350	100	n/c
Doncaster 156m53ch	156	53	MP 157	157	0	0.338	105	n/c
MP 157	157	0	MP 160	160	0	3.000	125	n/c
MP 160	160	0	Shaftholme Jn	160	30	0.375	100	n/c
Shaftholme Jn	**160**	**30**	**Colton Jn**	**182**	**79**	**22.613**	**125**	**155**
Colton Jn	182	79	186m20ch	186	20	3.262	125	n/c
186m20ch	186	20	186m43ch	186	43	0.287	100	n/c
186m43ch	186	43	187m25ch	187	25	0.775	90	n/c
187m25ch	187	25	Holgate Jn	188	7	0.775	60	n/c
Holgate Jn	188	7	South end York station	188	28	0.262	40	n/c
South end York station	188	28	York (mileage change)	188	40	0.150	30	n/c
York (mileage change)	0	0	North end York station	0	26	0.325	30	n/c
North end York station	0	26	0m42ch	0	42	0.200	50	n/c
0m42ch	0	42	1m9ch	1	9	0.588	60	n/c
1m9ch	1	9	Skelton Jn	1	50	0.513	125	n/c
Skelton Jn	**1**	**50**	**40m5ch**	**40**	**5**	**38.438**	**125**	**155**
40m5ch	40	5	41m50ch	41	50	1.563	115	n/c
41m50ch	41	50	Croft Jn	42	72	1.275	125	n/c
Croft Jn	42	72	Darlington South Jn	43	52	0.750	125	n/c
Darlington South Jn	43	52	S end Darlington station	43	72	0.250	90	n/c
S end Darlington station	43	72	Darlington	44	10	0.225	125	n/c
No >125mph running north of Darlington								
Total miles Kings Cross-Newcastle						**268.7**		
Miles at >125 mph						**135.3 = 50%**		

Note: All distances and existing speeds are given in good faith but should be confirmed by reference to the Sectional Appendix.