

Weston Package Phase 1
Major Scheme Business Case

Appendix 6.2

Independent Cost Audit



West of England Partnership

Bath & North East
Somerset Council



North
Somerset
Council

South Gloucestershire
Council



South West RDA

North Somerset Council



Weston-super-Mare Highway Schemes

Independent Surveyors Verification Report

27 March 2009

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This Report has been prepared for the exclusive use of North Somerset Council

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1.0 Introduction

- 1.1 The project comprises eight separate highway schemes all located in and around Weston-super-Mare as follows:
- Town Centre Gateway
 - Worle Station Car Park
 - M5 J21 Improvements
 - Drove Roundabout
 - Queen's Way Bus & Cycle Link
 - Elmham Way Bus Priority
 - Airfield Bridge Link
 - Cross Airfield Link Road
- 1.2 Halcrow Group Ltd have prepared sketch drawings and Technical Notes for each of the above schemes.
- 1.3 Based upon the sketch drawings, Halcrow Group have then prepared cost estimates for each individual project.
- 1.4 It is a requirement of the Department of Transport that Local Authorities who are seeking Government Funding for major transport schemes have capital cost estimates verified by an independent surveyor.
- 1.5 On behalf of North Somerset Council, Halcrow Group therefore requested Cyril Sweett to carry out a review of the quantities and costs including the various assumptions and provide comments in terms of accuracy and robustness of the quantities and costs for each scheme.

We wish to clarify that Cyril Sweett's appointment is limited to verifying the estimated construction costs from the various Construction Cost Summaries (i.e. the information contained in the cost estimates appended to this Report) at 4th Qtr 2008 pricing levels only.

North Somerset Council's attention is therefore specifically drawn to the exclusions scheduled in 3.4 and 3.5 of this Report.

2.0 Verification Report

2.1 Cyril Sweett have reviewed the information currently available for each scheme and have provided North Somerset Council (NSC) with a number of Cost Overview Reports as follows:

- Town Centre Gateway (dated 10th December 2008)
- Worle Station Car Park (dated 10th December 2008)
- M5 J21 Improvements (dated 10th December 2008)
- Drove Roundabout (dated 10th December 2008)
- Queen's Way Bus & Cycle Link (dated 10th December 2008)
- Elmham Way Bus Priority (dated 10th December 2008)
- Airfield Bridge Link (dated 10th December 2008)
- Cross Airfield Link (dated 24th March 2009)

Highway Improvement Schemes

2.2 The above Cyril Sweett Cost Overview Reports dated 10th December 2008 were subsequently forwarded to Halcrow Group by NSC.

Halcrow Group have reviewed Cyril Sweett's comments, observations and recommendations and incorporated these into revised Cost Estimates.

Revised Halcrow Group estimates were subsequently issued to Cyril Sweett under cover of a Technical Note dated 3rd March 2009.

2.3 Halcrow Group revised Cost estimates incorporate a number of generic changes to the rates and percentage 'on costs' together with further changes to each individual scheme estimate.

2.4 Following a review meeting with Halcrow Group held at Cyril Sweett's Bristol office on the 5th March 2009, a small number of further changes were made to the initial 7 nr Halcrow Cost Estimates.

These were then re-issued to Cyril Sweett under cover of a Technical Note reference TH/CT/RABN/11/1590 Version 2 dated 10th March 2009.

Copies of this Technical Note and revised estimates are provided in Appendix A of this Report.

2.0 Verification Report (cont'd)

Cross Airfield Link Road

- 2.5 At a review meeting held on the 5th March 2009 the Cyril Sweett Cross Airfield Link – Draft Cost Overview Report dated 17th February and Halcrow Group's Cross Airfield Link Road Technical Note ref CTRADN032.11 dated 26 February 2009 were reviewed and discussed in detail.

Following this detailed review, Halcrow Group adjusted their Cost Estimate to incorporate the items that Cyril Sweett and Halcrow jointly agree needed to be amended.

A revised Cost Estimate was re-issued to Cyril Sweett under the cover of a Technical Note on the 23rd March 2009.

A copy of the revised Cost Estimate is provided in Appendix B of this Report.

Generally

- 2.6 This Verification Report concludes the cost review exercise and presents Cyril Sweett's Conclusions.

3.0 Conclusions

3.1 The various issues raised by Cyril Sweett within the Cost Overview Reports have been addressed by Halcrow Group either by adjusting the Cost Estimate allowances as suggested or by clarifying why in their opinion, certain other suggested adjustments should not be incorporated.

Based upon the currently available information, the Total Construction Cost estimates incorporated into section 6 of the Weston Package bid document and Appendices A and B of this Report are verified as realistic for both the Preferred Scheme and Low Cost Scheme at 4th Qtr 2008 pricing levels.

This verification is subject to the exclusions listed in sections 3.4 and 3.5 of this Report and in the case of the Cross Airfield Link Road, is also subject to the Halcrow Group Earthworks Strategy current at the date of this Report.

The estimated total construction costs of the Preferred Scheme and Low Cost Scheme are as follows:

3.2 Preferred Scheme Base Total Estimated Cost: **£26,655,389**

Scheme		Cost
M5 J21 Improvements		1,749,283
Cross Airfield Link Road (excluding Roundabouts 1 and 4)		8,822,001
Airfield Bridge Link		10,573,364
Weston Gateway		
	Town Centre Gateway	2,006,693
	Drove Roundabout	905,159
Worle Station		
	Car Park	1,564,836
	Queen's Way Bus & Cycle Link	384,885
	Elmham Way Bus Priority	649,168
Total Estimated Cost at 2008 Pricing Levels		26,655,389

3.0 Conclusions (cont'd)

3.3 Low Cost Scheme Base Total Estimated Cost: £7,260,024

Scheme	Cost (£)
M5 J21 Improvements	1,749,283
Cross Airfield Link Road (excluding Roundabouts 1 and 4)	Excluded
Airfield Bridge Link	Excluded
Weston Gateway	
Town Centre Gateway	2,006,693
Drove Roundabout	905,159
Worle Station	
Car Park	1,564,836
Queen's Way Bus & Cycle Link	384,885
Elmham Way Bus Priority	649,168
Total Estimated Cost at 2008 Pricing Levels	7,260,024

3.0 Conclusions (cont'd)

3.4 Exclusions

The following items are excluded from all of the above Total Construction Costs:

- a) Site acquisition costs - land and property
- b) Compensation costs for existing owners/tenants
- c) Finance costs.
- d) Value added tax.
- e) Legal fees and legal agreements including S278.
- f) Design fees, professional fees, Traffic Regulation Order's.
- g) NSC Officer Costs
- h) Preparation Costs
- i) Pre construction fees and charges
- j) Construction Supervision
- k) Post construction costs
- l) Risk Register allowances
- m) Optimism bias

Notes:

the nature of the M5 J21 Improvements and the Airfield Bridge Link are more complex and carry a higher risk than the other schemes and therefore an optimism bias of as high as 66% for non-standard civil engineering works could be appropriate (as referred to in the Halcrow Group Technical Note dated 3rd March 2009).

- n) Inflation/deflation from 4Qtr 2008 to the anticipated start on site dates.
- o) Public Art.

3.5 In addition to the above, the following items are specifically excluded from the Cross Airfield Link Road Costs:

- a) Electricity, gas, water and telecom services to serve the development site(s)
- b) Foul and storm drainage to serve the development site(s).
- c) Up-grading of existing statutory electricity, gas, water and telecom infrastructure systems as required to service the development site(s).
- d) Bulb, ground cover or shrub planting.
- e) Roundabouts 1 and 4 (to be funded by Developer)

**Weston-super-Mare Schemes
Independent Surveyors Verification Report**



**Appendix A – Halcrow Group Technical Note ref TH/CT/RABN/11/1590 Version
2 and Revised Estimates**

**Weston-super-Mare Schemes
Independent Surveyors Verification Report**



Appendix B – Cross Airfield Link Road Construction Cost Summary

Technical note

Project	Weston-Super-Mare Schemes	Date	10 March 2009
Note	Review of cost estimates February/ March 2009	Ref	TH/CT/RABN/11/1590
Author	Peter Ridal		Version 2

1 *Introduction*

1.1 This note has been produced to respond to the reports produced by Cyril Sweett, all dated 28 November 2008 unless shown otherwise, commenting on Halcrow's initial capital cost estimates for the below schemes:

- Town Centre Gateway
- Worle Station Car Park
- M5 J21 Improvements
- Drove Roundabout
- Queen's Way Bus & Cycle Link
- Elmham Way Bus Priority
- Cross Rail Alignments (dated 28 October 2009)

1.2 The review also takes account of requirements detailed in an email from Mark Anderson to Peter Ridal dated 4 February 2009.

1.3 As a result the review includes generic changes that apply to all the estimates and changes that apply to individual schemes. These are described in the following sections and the revised estimates are presented in appendices at the end of this note.

2 *Generic changes*

2.1 Generic changes mean changes that apply to all estimates. These are listed below.

- Rates, where available, are taken from Spon's Civil Engineering and Highway Works Price Book 2009. These are based on 2008 prices.
- Allowance for Contractor's Insurance, Preliminaries, Overheads and Profit is taken as 21% of measured work items, in line with Cyril Sweett and client recommendations

- As recommended by Cyril Sweett, the allowance for unmeasured items, sometimes referred to as contingency, has been reduced to 10% of measured items, unless noted otherwise within the text.
- Preparation costs are excluded from the estimates
- Land and compensation costs are excluded from the estimates
- Optimism bias is excluded from the estimates
- It is assumed that excess plantings will be disposed of at no cost

3

Rates used

3.1

The rates used fall into two categories; those that are directly available from Spon's Price Book 2009 and those that have been derived from other sources where the Spon's rates are not available or are considered to be inappropriate. For reference Appendix H lists the Spon's 2009 rates used and the rates from other sources.

3.2

The rates from other sources have not been adjusted from the earlier estimates to allow for inflation. This may result in a small underestimation of cost.

4

Changes to individual scheme estimates

4.1

Each scheme has been reviewed individually and a revised capital cost estimate has been appended to this technical note.

5

Town Centre Gateway

5.1

The following items have been added to the estimates in accordance with the Cyril Sweett review.

- Disconnect & remove 25 lighting columns
- Disconnect & remove 30 road gullies
- Increase in excavation quantity to 6068m³
- Increase break out quantity for kerbs to 625m
- Increase break out quantity for carriageway to 600m²
- Increase sub base quantity to 3405m³
- Increase footway/ cycleway quantity to 1350m²

5.2

The amended estimate is attached at Appendix A.

6

Worle Station Car Park

6.1

The following items have been added to the estimates in accordance with the Cyril Sweett review.

- Increase 100mm thick DBM base course quantity to 11075m²
- Increase number of street lights to 10
- Limit cost of road signs and markings to £10,000
- Allow £100,000 for improved station platform shelter facilities
- Allow £50,000 for new bus shelters and stops to north of station
- Allow £20,000 for dealing with any contaminated ground encountered as a result of fuel or other leakage from trains using the adjacent railway line

6.2 The amended estimate is attached at Appendix B.

7 ***M5 J21 Improvements***

7.1 The report produced by Cyril Sweett for this scheme does not provide a capital cost estimate because they were unable to verify many of the quantities. This reflects the preliminary nature of the design work for this scheme. The report also raises some specific issues on quantities but these are again related to assumptions that have been made in the preliminary design.

7.2 Under the circumstances the Sweett report does not provide sufficient new evidence to justify any changes to the 'Halcrow' quantities. Therefore the quantities are unaltered and the unmeasured work/ contingency item is maintained at 20% to reflect the current uncertainty on quantity of work. It would also be prudent to consider a higher optimism bias for this work, say 66%, for non-standard civil engineering work.

7.3 Generic changes to rates are applied and the amended estimate is attached at Appendix C.

8 ***Drove Roundabout***

8.1 The following items have been added to the estimates in accordance with the Cyril Sweett review.

- Disconnect & remove 4 lighting columns
- Disconnect & remove 14 road gullies
- Include break out quantity for kerbs of 1000m
- Increase excavation quantity to 2250m³
- Increase offsite disposal quantity to 2250m³ with 50% assumed to be acceptable material and 50% contaminated material
- Increase break out quantity for carriageway to 2275m²
- Increase imported topsoil quantity to 150m³

- Increase sub base quantity to 1275m³
- Increase base course quantity to 2950m²
- Increase binder course quantity to 3300m²
- Increase surface course quantity to 3300m²

8.2 The amended estimate is attached at Appendix D.

9 *Queen's Way Bus & Cycle Link*

9.1 The following items have been added to the estimates to take account of the Cyril Sweett review.

- Include break out quantity for kerbs of 230m
- Increase planing quantity to 750m²
- Increase surface course quantity to 2050m²
- Increase carriageway area for signs and markings to 2050m²
- Include allowance of £5,000 for making good footpaths
- Include allowance of £30,000 automatic bollards
- Include allowance of £50,000 for moving public art

9.2 The amended estimate is attached at Appendix E.

10 *Elmham Way Bus Priority*

10.1 The following items have been added to the estimates in accordance with the Cyril Sweett review.

- Disconnect & remove 15 road gullies
- Include break out quantity for kerbs of 550m
- Increase break out quantity for carriageway to 2000m²
- Increase excavation quantity to 1350m³
- Increase offsite disposal quantity to 1350m³
- Increase topsoil quantity to 75m³
- Reduce sub base quantity to 715m³
- Reduce base course quantity to 1630m²
- Reduce binder course quantity to 1630m²
- Reduce surface course quantity to 1630m²
- Increase footway/ cycleway quantity to 975 m²
- Include quantity for paving pedestrian refuges of 275m²
- Increase carriageway area for signs and markings to 5500m²
- Reduce number of new signalised junctions to 1
- Allow £75,000 for amendments to existing signalised junction

10.2 The amended estimate is attached at Appendix F.

11 *Cross Rail Alignments*

11.1 The following items have been added to the estimates in accordance with the Cyril Sweett review.

- Carriageway quantities set at 8,700m² for Route A Options 1 and 2
- Kerb quantities set at 1,750m for Route A Options 1 and 2
- Increase rate for polystyrene fill from £56.26/m³ to £65.00/m³
- Increase rate for surcharge £15.14/m³ to £21.83/m³ for route A Option 1 in line with rates used for other options

11.2 Note that the nature of work for this scheme is more complex and carries higher risk than the other schemes, and therefore an optimism bias of 66% for non-standard civil engineering works should apply.

11.3 The amended estimate is attached at Appendix G.

Appendix A – Revised Town Centre Gateway Cost Estimate

Appendix B – Revised Worle Station Car Park Cost Estimate, Version 1

Appendix C – Revised M5 J21 Improvements Cost Estimate, Version 1

Appendix D – Revised Drove Roundabout Cost Estimate, Version 1

Appendix E – Revised Queen’s Way Bus and Cycle Link Cost Estimate, Version 1

Appendix F – Revised Elmham Way Bus Priority Cost Estimate, Version 1

Appendix G – Revised Cross Rail Alignments Cost Estimate

Appendix H – Rates used, Version 1

Appendices are separate files.

Town Centre Gateway Improvements

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (urban)	ha	£3,411.36	2	6,823
Disconnect & remove lighting columns	no	£95.77	25	2,394
Disconnect & remove road gullies	no	£50.00	30	1,500
Earthworks				
Excavate acceptable material 5A -topsoil	m ³	£2.87	900	2,583
Excavate acceptable material	m ³	£2.87	5168	14,832
Topsoiling	m ³	£15.00	250	3,750
Break-out existing kerbs & edgings	m	£8.00	625	5,000
Break-out existing carriageway	m ²	£6.05	600	3,630
Break-out existing footway	m ²	£4.03	625	2,519
Disposal (off-site) of material	m ³	£22.00	6068	133,496
Carriageway				
Plane existing carriageway for benching	m ³	£6.48	150	972
Type 1 sub-base – 350mm thick	m ³	£31.09	3405	105,861
Basecourse – 190mm DBM	m ²	£35.65	9150	326,198
Binder course – 55mm DBM	m ²	£12.48	9150	114,192
Surface course – 35mm TWCS	m ²	£9.49	9150	86,834
Kerbing – type HB	m	£15.00	2100	31,500
Precast concrete edgings	m	£12.00	475	5,700
Footway/Cycleway	m ²	£21.83	1350	29,471
Drainage				
225mm dia. Carrier drain	m	£81.77	720	58,874
Gullies	no	£400.00	50	20,000
Chambers 0-2m deep	no	£1,534.57	8	12,277
Chambers 2-4m deep	no	£3,634.41	3	10,903
Signs & Lighting				
Signs/Markings - cost/m2 carriageway	m ²	£3.50	12000	42,000
Street Lighting	no	£1,054.01	25	26,350
Miscellaneous				
Pedestrian crossings	nr	£30,000.00	2	60,000
Changes to existing signals & additional signals at Winterstoke rbt + signals on Marchfields Way	sum			100,000
Landscaping	sum			50,000
Utilities	sum			250,000
Non-itemised work (10%)	sum			150,766
Sub-total				1,658,424
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	348,269
Grand-total				2,006,693

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 2.5%.

-2 It is assumed that all other excavated material will be disposed off site to a tip within 1km of site. Lanfill tax and tipping charges apply.

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (trees & shrubs)	ha	£2,297.60	0.5	1,149
Fencing				
Boundary Fence (1.8m chain link)	m	£14.35	500	7,175
Earthworks				
Excavate acceptable material 5A -topsoil	m ³	£2.87	3025	8,682
Excavate acceptable material	m ³	£2.87	3450	9,902
General Fill (site won material)	m ³	£1.15	450	518
Topsoiling	m ³	£15.00	850	12,750
Break-out existing hardstanding	m ²	£21.62	450	9,729
Disposal (off-site) of material	m ³	£22.00	6475	142,450
Allowance to deal with contamination from the adjacent railway line	sum			20,000
Pavement Construction				
Type 1 sub-base – 250mm thick	m ³	£31.09	3200	99,488
Basecourse – 150mm DBM	m ²	£27.98	1675	46,867
Binder course – 65mm DBM	m ²	£13.85	1675	23,199
Surface course – 35mm TWCS	m ²	£9.49	1675	15,896
Basecourse – 100mm DBM	m ²	£18.66	11075	206,660
Binder course – 65mm DBM	m ²	£13.85	11075	153,389
Surface course – 25mm DBM	m ²	£8.69	11075	96,242
Kerbs Footways & Paved Areas				
Kerbing – type HB	m	£15.00	400	6,000
Precast concrete edgings	m	£12.00	250	3,000
Footway/Cycleway	m ²	£21.83	625	13,644
Drainage				
Channel drain	m	£35.69	100	3,569
Kerb drain	m	£117.99	150	17,699
Hydrobreak manhole	nr	£3,000.00	2	6,000
Chambers 0-2m deep	no	£1,534.57	7	10,742
225mm dia. Carrier drain	m	£81.77	225	18,398
Gullies	no	£400.00	5	2,000
Petrol Interceptor	no	£5,000.00	2	10,000
Signs & Lighting				
Signs/Markings - cost/m2 carriageway	sum			10,000
Street Lighting	no	£1,054.01	10	10,540
Miscellaneous				
CCTV Camera	sum			5,000
Landscaping	sum			25,000
Parking machines	sum			5,000
Utilities	sum			25,000
Improved station platform shelters	sum			100,000
New bus shelters & stops to north of station	sum			50,000
Non-itemised work (10%)	sum			117,568
Sub-total				1,293,253
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	271,583
Grand total				1,564,836

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 5%.

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (urban)	ha	£3,411.36	0.5	1,706
Fencing				
Timber 4 rail fence	m	£22.09	100	2,209
Earthworks				
Excavate acceptable material 5A -topsoil	m ³	£2.87	1100	3,157
Excavate acceptable material	m ³	£4.49	275	1,235
General Fill (imported material)	m ³	£25.44	3450	87,768
Topsailing	m ³	£15.00	1125	16,875
Disposal (off-site) of material	m ³	£22.00	1375	30,250
Carriageway				
Plane existing carriageway for benching	m ³	£6.48	2175	14,094
Type 1 sub-base – 350mm thick	m ³	£31.09	1150	35,754
Basecourse – 190mm DBM	m ²	£35.65	3050	108,733
Binder course – 55mm DBM	m ²	£12.48	3375	42,120
Surface course – 35mm TWCS	m ²	£9.49	3700	35,113
High friction surfacing	m ²	£19.25	230	4,428
Kerbing – type HB	m	£15.00	1150	17,250
Safety Barriers				
Single sided OBB	m	£43.09	1075	46,322
Short posts in concrete foundations	nr	£53.82	672	36,167
Terminal Sections	nr	£588.16	5	2,941
Drainage				
150mm dia. carrier drain	m	£62.26	100	6,226
Gullies	no	£400.00	30	12,000
Chambers 0-2m deep	no	£1,534.57	6	9,207
Chambers 2-4m deep	no	£3,634.41	2	7,269
Chambers 4-6m deep	no	£9,538.72	1	9,539
Signs & Lighting				
Signs – cost/ m2 carriageway	m ²	£3.50	3800	13,300
Street Lighting	no	£1,054.01	20	21,080
Structures				
Retaining wall and extention to culvert	sum			300,000
Miscellaneous				
Accommodation works (realigning footpath on north east quadrant etc.)	sum			25,000
Traffic signals (two junctions)	sum			160,000
Landscaping (linear metre)	m	£15.00	1000	15,000
Removal of existing and erection of new sign gantry	sum			40,000
Utilities	sum			100,000
Non-itemised work (20%)	sum			240,948
Sub-total				1,445,689
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	303,595
Grand total				1,749,283

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 2.5%.

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (urban)	ha	£3,411.36	0.5	1,706
Disconnect & remove lighting columns	no	£95.77	4	383
Disconnect & remove road gullies	no	£50.00	14	700
Earthworks				
Excavate acceptable & contaminated material	m ³	£4.49	2250	10,103
Break-out existing kerbs & edgings	m	£8.00	1000	8,000
Break-out existing carriageway	m ²	£6.05	2275	13,764
Break-out existing footway	m ²	£4.03	700	2,821
Disposal (off-site) of material	m ³	£22.00	1125	24,750
Disposal (off-site) of contaminated material	m ³	£100.00	1125	112,500
Topsolling	m ³	£15.00	150	2,250
Carriageway				
Plane existing carriageway for benching	m ³	£6.48	70	454
Type 1 sub-base – 350mm thick	m ³	£31.09	1275	39,640
Basecourse – 190mm DBM	m ²	£35.65	2950	105,168
Binder course – 55mm DBM	m ²	£12.48	3300	41,184
Surface course – 35mm TWCS	m ²	£9.49	3300	31,317
High friction surfacing	m ²	£19.25	350	6,738
Kerbing – type HB	m	£15.00	800	12,000
Precast concrete edgings	m	£12.00	275	3,300
Footway/Cycleway	m ²	£21.83	775	16,918
Paving to new traffic islands	m ²	£50.00	400	20,000
Tactile paving to new pedestrian crossings	m ²	£50.00	60	3,000
Drainage				
Gullies	no	£400.00	14	5,600
Signs & Lighting				
Traffic signs and road markings	m ²	£3.50	3300	11,550
Street Lighting	no	£1,054.01	4	4,216
Miscellaneous				
Pedestrian crossings	nr	£30,000.00	5	150,000
Landscaping	sum			2,000
Utilities	sum			50,000
Non-itemised work (10%)	sum			68,006
Sub-total				748,066
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	157,094
Grand-total				905,159

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 2.5%.

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (urban)	ha	£3,411.36	0.5	1,706
Disconnect & remove lighting columns	no	£95.77	5	479
Earthworks				
Excavate acceptable material incl topsoil	m ³	£4.49	670	3,008
Topsailing	m ³	£15.00	20	300
Break-out existing kerbs & edgings	m	£8.00	230	1,840
Break-out existing carriageway	m ²	£6.05	550	3,328
Break-out existing footway	m ²	£4.03	375	1,511
Disposal (off-site) of material	m ³	£22.00	670	14,740
Carriageway				
Plane existing carriageway for benching	m ³	£6.48	750	4,860
Type 1 sub-base – 350mm thick	m ³	£31.09	500	15,545
Basecourse – 190mm DBM	m ²	£35.65	1300	46,345
Binder course – 55mm DBM	m ²	£12.48	1300	16,224
Surface course – 35mm TWCS	m ²	£9.49	2050	19,455
Kassel Kerbs	m	£60.39	50	3,020
Kerbing – type HB	m	£15.00	300	4,500
Precast concrete edgings	m	£12.00	25	300
Footway/Cycleway	m ²	£21.83	25	546
Drainage				
225mm dia. Carrier drain	m	£81.77	85	6,950
Gullies	no	£400.00	7	2,800
Chambers 2-4m deep	no	£3,634.41	2	7,269
Signs & Lighting				
Signs/Markings - cost/m2 carriageway	m ²	£3.50	2050	7,175
Street Lighting	no	£1,054.01	5	5,270
Miscellaneous				
Landscaping	sum			2,000
Make good footpaths	sum			5,000
Bus Shelters	sum			10,000
Move public art	sum			50,000
Automated bollards	sum			30,000
Utilities	sum			25,000
Non-itemised work (10%)	sum			28,917
Sub-total				318,087
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	66,798
Grand-total				384,885

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 2.5%.

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (urban)	ha	£3,411.36	1	3,411
Disconnect & remove lighting columns	nr	£95.77	10	958
Disconnect & remove road gullies	no	£50.00	15	750
Earthworks				
Excavate acceptable material 5A - topsoil	m ³	£4.49	100	449
Excavate acceptable material	m ³	£4.49	1250	5,613
Topsoiling	m ³	£15.00	75	1,125
Break-out existing kerbs & edgings	m	£8.00	550	4,400
Break-out existing carriageway	m ²	£6.05	2000	12,100
Disposal (off-site) of material	m ³	£22.00	1350	29,700
Carriageway				
Type 1 sub-base – 350mm thick	m ³	£31.09	715	22,229
Basecourse – 190mm DBM	m ²	£35.65	1630	58,110
Binder course – 55mm DBM	m ²	£12.48	1630	20,342
Surface course – 35mm TWCS	m ²	£9.49	1630	15,469
Kerbing – type HB	m	£15.00	750	11,250
Precast concrete edgings	m	£12.00	250	3,000
Footway/Cycleway	m ²	£21.83	975	21,284
Paving to pedestrian refuges	m ²	£50.00	275	13,750
Drainage				
Gullies	no	£400.00	15	6,000
Signs & Lighting				
Signs/Markings - cost/m2 carriageway	m ²	£3.50	5500	19,250
Street Lighting	no	£1,054.01	10	10,540
Miscellaneous				
Signalised Junctions inc pedestrian crossings	nr	£100,000.00	1	100,000
Amendments to existing signalised junction & pedestrian crossing	sum			75,000
Landscaping	sum			3,000
Utilities	sum			50,000
Non-itemised work (10%)	sum			48,773
Sub-total				536,503
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	112,666
Grand-total				649,168

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 2.5%.

Cross Railway Link Cost Estimate (Route A - Option 2)

Description	Unit	Rate	Quantity	Cost (£)
Demolition & Site Clearance				
General site clearnace (open field)	ha	£1,104.80	3.5	£3,866.80
General site clearnace (urban)	ha	£3,411.36	1.5	£5,117.04
Fencing				
Timber 4 rail fence	m	£22.09	1300	£28,717.00
Earthworks				
Excavate acceptable material 5A -topsoil	m ³	£2.87	4150	£11,910.50
Excavate acceptable material	m ³	£2.87	2000	£5,740.00
General Fill	m ³	£25.54	14025	£358,198.50
Topsoiling	m ³	£15.00	1175	£17,625.00
Disposal (on-site) of material	m ³	£2.84	8425	£23,927.00
Geotechnical Improvement				
Concrete deck over landfill area	m ²	£1,000.00	4440	£4,440,000.00
Load transfer platform	sum			£1,047,750.00
Provide, lay & remove surcharge	sum			£127,000.00
Band drains	sum			£19,000.00
Carriageway				
Remove existing carriageway	m ²	£6.05	1386	£8,385.30
Type 1 sub-base – 150mm thick	m ³	£31.09	1075	£33,421.75
Basecourse – 150mm DBM	m ²	£27.98	8700	£243,426.00
Binder course – 60mm DBM	m ²	£12.48	8700	£108,576.00
Surface course – 35mm TWCS	m ²	£9.49	8700	£82,563.00
Footway/ Cycleway	m ²	£21.83	2700	£58,941.00
Kerbing – type HB	m	£15.00	1750	£26,250.00
Precast concrete edgings	m	£12.00	775	£9,300.00
Safety Barriers				
Single sided OBB	m	£43.09	120	£5,170.80
Short posts in concrete foundations	nr	£53.82	52	£2,798.64
Terminal Sections	nr	£588.16	4	£2,352.64
Type 048 connections to bridge parapet	nr	£67.92	4	£271.68
Vehicle Parapet	m	£259.60	54	£14,018.40
Drainage				
225mm dia. carrier drain	m	£81.77	675	£55,194.75
Gullies	no	£400.00	45	£18,000.00
Chambers 0-2m deep	no	£1,534.57	7	£10,741.99
Chambers 2-4m deep	no	£3,634.41	5	£18,172.05
Chambers 4-6m deep	no	£9,538.72	1	£9,538.72
Signs & Lighting				
Signs – cost/ m2 carriageway	m ²	£2.50	8700	£21,750.00
Street Lighting	no	£1,054.01	50	£52,700.50
Structures				
Bridge over railway	sum			£800,000.00
Miscellaneous				
Accommodation works (new garden fences etc.)	sum			£0
Landscaping (linear metre)	m	£15.00	900	£13,500.00
Utilities	sum			£100,000.00
Traffic signals for 4 arm junction	nr	£80,000.00	2	£160,000.00
Non-itemised work (10%)	sum			794,393
Sub-total				8,738,318
Overhead Items				
Insurance, Preliminaries, Overheads, Margin			21%	1,835,047
Grand-total				10,573,364

-1 The cost does not include 'capping' of the underlying material as it is assumed that the existing ground or fill material used will achieve a CBR value in excess of 15%.

-2 It is assumed that all excavated material will be disposed off within the boundary of the site.

Description	Total
Series 100 - Preliminaries 15%	£1,814,110.58
Series 200 - Site Clearance	£63,008.99
Series 300 - Fencing	£116,345.00
Series 400 - Road Restraint Systems (Vehicle and Pedestrian)	£61,920.00
Series 500 - Drainage and Service Ducts	£746,872.92
Series 600 - Earthworks	£3,997,613.64
Series 700 - Pavements	£2,222,938.62
Series 1100 - Kerbs, Footways and Paved Areas	£1,434,166.89
Series 1200 - Traffic Signs and Road Markings	£312,414.46
Series 1300 - Road Lighting Columns and Brackets	£503,451.00
Series 1400 - Electrical Work for Road Lighting and Traffic Signs	£848,450.00
Series 2500 - Special Structures	£1,646,950.00
Series 2700 - Accommodation Works, Works for Statutory Undertakers, Provisional Sums and Prime Cost Items	£139,939.00
Series 3000 - Landscape and Ecology	£13,908,181.10
TOTAL	£695,409.05
CONTINGENCIES 5%	
TOTAL CONSTRUCTION COSTS INCLUDING CONTINGENCIES	£14,603,590.15

WESTON PACKAGE MSBC	
TOTAL CONSTRUCTION COST INCLUDING CONTINGENCIES (Excluding roundabout 1 & 4)	£8,822,001.14
WESTON PACKAGE DEVELOPER CONTRIBUTION	
TOTAL CONSTRUCTION COST INCLUDING CONTINGENCIES (Roundabout 1 & 4)	£5,781,589.01

Roundabout 1	Roundabout 2	Roundabout 3	Roundabout 4	Link Road Section 1	Link Road Section 2	Link Road Section 3
£20,653.92	£1,900.16	£2,216.86	£25,570.29	£4,592.06	£1,108.43	£6,967.27
£9,087.50	£10,147.50	£8,415.00	£12,667.50	£22,297.50	£10,980.00	£42,750.00
£17,880.00	£12,480.00	£15,600.00	£15,960.00	£0.00	£0.00	£0.00
£88,825.50	£84,076.00	£74,294.52	£122,955.96	£115,396.62	£57,428.16	£203,896.16
£761,375.29	£287,584.94	£258,965.55	£546,213.47	£1,037,545.75	£137,877.45	£968,051.17
£262,650.72	£252,557.90	£207,436.60	£492,679.32	£367,524.00	£106,681.68	£533,408.40
£166,719.30	£133,139.73	£108,310.19	£198,187.24	£262,505.98	£115,821.84	£449,482.61
£106,363.70	£76,960.40	£16,960.40	£77,852.72	£9,242.14	£7,229.14	£17,805.96
£56,199.00	£51,000.00	£34,790.00	£96,282.00	£81,600.00	£36,860.00	£146,720.00
£12,000.00	£0.00	£287,000.00	£158,450.00	£24,000.00	£24,000.00	£343,000.00
£810,900.00	£0.00	£0.00	£705,300.00	£25,000.00	£105,750.00	£0.00
£5,461.00	£12,141.00	£10,217.00	£17,831.00	£22,424.00	£14,705.00	£57,160.00
£2,318,115.93	£921,987.64	£1,024,206.12	£2,469,949.50	£1,972,128.06	£618,441.70	£2,769,241.57

Roundabout 1&4 series 200-3000 totals are	39.59%	% of the overall series 200-3000 total
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