



Project Costs Breakdown

Outline Business Case - Appendix O

17 January 2020

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1 Assumptions and Exclusions

Cambridge to Cambourne

General Assumptions

- 1 Estimate is based at 4Q18
- 2 Risk and contingency is applied based on a Phase 3 estimate, Option Selection, as per agreed procedure
- 3 Works expected to be carried out in normal working hours 08:00 to 18:00, Monday to Friday
- 4 Uplifts have been applied to the estimate to cover any night time or out of hours working that may be required on
- 5 Works can be carried out under half road closure wherever possible
- 6 Allowances have been included where we have not received sufficient information to allow us to price the works confidently. These have been clearly identified in the estimate and will require validation when further information becomes available
- 7 Existing ground level approximately same as finished construction levels
- 8 All signage to be unlit
- 9 All excavated material is assumed as inert
- 10 Land deemed relatively flat
- 11 No hard digging required for any element of the scheme
- 12 Topsoil can be reused - no imported topsoil needed
- 13 Where possible budget quotations have been used from specialist subcontractors
- 14 2.5% of the total Direct Construction Costs have been used for environmental mitigation measures
- 15 1000m length of new road is allowed for in Option 1-3 to connect the road from Bourn Airfield to Wellington Way Roundabout
- 16 Rate book dated 8th April 2019 applied
- 17 See estimates and rates sheet for further assumptions and details of scope
- 18 All lighting columns assumed to be 8m high in absence of specific design information

Specific Option Assumptions

Phase 1

- 19 Length of Guided Busway; 4760m
- 20 Length of Maintenance track/ Footway/ Cycleway; 4749m
- 21 Allowed for unbound subbase only below the guided busway - specific construction details not known
- 22 Allowance made for 4 nr of bus stops
- 23 Concrete batching plant site compound allowed for within the prelims allowance
- 24 Out of hours allowance included
- 25 Drainage surveys included in the design percentage
- 26 Bridges are assumed to not be painted eg Corten weathering steel or concrete finish
- 27 Resurfacing is needed on M11 road ridge.
- 28 Allowance made for demolishing existing bridge at Bin Brook Crossing and building a new one.

Phase 2 Option 1

- 29 Length of Guided Busway; 5694m
- 30 Allowance made for 4 nr of bus stops
- 31 Concrete batching plant site compound allowed for within the prelims allowance
- 32 Out of hours allowance included

Phase 2 Option 2

- 33 Length of Guided Busway; 2078m
- 34 Allowance made for 4 nr of bus stops
- 35 Concrete batching plant site compound allowed for within the prelims allowance
- 36 Out of hours allowance included

Phase 2 Option 3

- 37 Length of Guided Busway; 2078m
- 38 Length of Bus Lane; 6159m
- 39 Allowance made for 4 nr of bus stops
- 40 Concrete batching plant site compound allowed for within the prelims allowance
- 41 Out of hours allowance included

Cambridge to Cambourne

Water Works Park and Ride

- 42 Bare rooted native species whips as environmental barrier
- 43 Allowance made for 1nr attenuation pond

Scotland Farm Park and Ride

- 44 Bare rooted native species whips as environmental barrier
- 45 Allowance made for 1nr attenuation pond and 1nr naturalised pond

General Exclusions

- 46 Bus Depot
- 47 Fuel resistant asphalt
- 48 Telecommunication works for NRTS including any ducting for the dual carriageways
- 49 Optimism Bias
- 50 VAT
- 51 3rd party compensation costs
- 52 Planning and approval charges
- 53 Land purchase or rental
- 54 Costs associated with Statutory Fees (e.g. HMRI, Local Authority, etc.)
- 55 Costs associated with taxes, levies and licences
- 56 Costs associated with changes in legislation and any form of applicable standards
- 57 Allowances for unforeseen ground conditions / provisions for ground stabilisation unless specifically identified
- 58 Christmas, Easter and Bank Holiday working
- 59 Archaeological digs
- 60 Works that have not been specifically included for in the estimate
- 61 Re-location of affected businesses
- 62 Given the level of detail provided, it is not possible to quantify the extent of utilities to be relocated, protected or diverted. Costs for diversions can be extremely volatile and as such are very difficult to derive, and as such have been excluded from these estimates

Specific Option Exclusions

Phase 1 & Phase 2

- 63 Telecomms work
- 64 Procurement of new buses excluded
- 65 New depot excluded

Water Works Park and Ride

- 66 Out of hours working is excluded

Scotland Farm Park and Ride

- 67 Out of hours working is excluded

Clarification of cost structure for each Option

Option 1a - Includes

- 68 Phase 1 Madingley Mulch Roundabout to Grange Road
- 69 Phase 2 Cambourne to Bourn Roundabout
- 70 Phase 2 Bourn Roundabout to Madingley Mulch Roundabout (Full Off Road)

Water Works Park and Ride

Cambridge to Cambourne

Option 1b - Includes

- 72 Phase 1 Madingley Mulch Roundabout to Grange Road
- 73 Phase 2 Cambourne to Bourn Roundabout
- 74 Phase 2 Bourn Roundabout to Madingley Mulch Roundabout (Full Off Road)
- 75 Scotland Farm Park and Ride

Option 2a - Includes

- 76 Phase 1 Madingley Mulch Roundabout to Grange Road
- 77 Phase 2 Cambourne to Bourn Roundabout
- 78 Phase 2 Bourn Roundabout to Madingley Mulch Roundabout (Do Minimum On Road)
- 79 Waterworks Park and Ride

Option 2b - Includes

- 80 Phase 1 Madingley Mulch Roundabout to Grange Road
- 81 Phase 2 Cambourne to Bourn Roundabout
- 82 Phase 2 Bourn Roundabout to Madingley Mulch Roundabout (Do Minimum On Road)
- 83 Scotland Farm Park and Ride

Option 3a - Includes

- 84 Phase 1 Madingley Mulch Roundabout to Grange Road
- 85 Phase 2 Cambourne to Bourn Roundabout
- 86 Phase 2 Bourn Roundabout to Madingley Mulch Roundabout (Do Minimum with Bus Lanes)
- 87 Waterworks Park and Ride

Option 3b - Includes

- 88 Phase 1 Madingley Mulch Roundabout to Grange Road
- 89 Phase 2 Cambourne to Bourn Roundabout
- 90 Phase 2 Bourn Roundabout to Madingley Mulch Roundabout (Do Minimum with Bus Lanes)
- 91 Scotland Farm Park and Ride

Whole Life Cost Estimate

- 92 Capital costs for removing infrastructure have been omitted on the assumption that the infrastructure will remain ad infinitum
- 93 Costs evaluated over a 60 year period
- 94 The Discounted rate used of 3.5% is based on information obtained from HM Treasury's Green Book where the life
- 95 P80 costs referenced for WLC estimates
- 96 WLC estimate does not include for bus way renewals

2 Drawing

DRAWINGS REGISTER

<i>Ref:</i>	<i>Title</i>	<i>Revision</i>
5164295-ATK-ZZ-ZZ-DR-L-9	SCOTLAND FARM PARK AND RIDE LANDSCAPE PLAN	N/A
5020059_HW_FS_301	Waterworks Alternative Park and Ride Layout	A
5020059_HW_FS_130	Do something 1B Off Road Phase 1 + Scotland Farm Sheet 1 of 5	C
5020059_HW_FS_131	Do something 1B Off Road Phase 1 + Scotland Farm Sheet 2 of 5	C
5020059_HW_FS_132	Do something 1B Off Road Phase 1 + Scotland Farm Sheet 3 of 5	C
5020059_HW_FS_133	Do something 1B Off Road Phase 1 + Scotland Farm Sheet 4 of 5	C
5020059_HW_FS_134	Do something 1B Off Road Phase 1 + Scotland Farm Sheet 5 of 5	C
5020059_HW_FS_140	Do something 1A Off Road Phase 1 + WaterWorks Sheet 1 of 5	C
5020059_HW_FS_141	Do something 1A Off Road Phase 1 + WaterWorks Sheet 2 of 5	C
5020059_HW_FS_142	Do something 1A Off Road Phase 1 + WaterWorks Sheet 3 of 5	C
5020059_HW_FS_143	Do something 1A Off Road Phase 1 + WaterWorks Sheet 4 of 5	C
5020059_HW_FS_144	Do something 1A Off Road Phase 1 + WaterWorks Sheet 5 of 5	C
5020059_HW_FS_150	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 1 of 7	C
5020059_HW_FS_151	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 2 of 7	C
5020059_HW_FS_152	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 3 of 7	C
5020059_HW_FS_153	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 4 of 7	C
5020059_HW_FS_154	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 5 of 7	C
5020059_HW_FS_155	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 6 of 7	C
5020059_HW_FS_156	Do something 2B Off Road Phase 1 + Scotland Farm Sheet 7 of 7	C
5020059_HW_FS_160	Do something 2A Off Road Phase 1 + WaterWorks Sheet 1 of 7	C
5020059_HW_FS_161	Do something 2A Off Road Phase 1 + WaterWorks Sheet 2 of 7	C
5020059_HW_FS_162	Do something 2A Off Road Phase 1 + WaterWorks Sheet 3 of 7	C
5020059_HW_FS_163	Do something 2A Off Road Phase 1 + WaterWorks Sheet 4 of 7	C
5020059_HW_FS_164	Do something 2A Off Road Phase 1 + WaterWorks Sheet 5 of 7	C
5020059_HW_FS_165	Do something 2A Off Road Phase 1 + WaterWorks Sheet 6 of 7	C
5020059_HW_FS_169	Do something 2A Off Road Phase 1 + WaterWorks Sheet 7 of 7	C
5020059_HW_FS_220	Phase 2 Option 1 Do Something Full Off Road Option Sheet 1 of 3	A
5020059_HW_FS_221	Phase 2 Option 1 Do Something Full Off Road Option Sheet 2 of 3	A
5020059_HW_FS_222	Phase 2 Option 1 Do Something Full Off Road Option Sheet 3 of 3	A
5020059_HW_FS_223	Phase 2 Option 2 Do Something Full Off Road Option Sheet 1 of 3	A
5020059_HW_FS_224	Phase 2 Option 2 Do Something Full Off Road Option Sheet 2 of 3	A
5020059_HW_FS_225	Phase 2 Option 2 Do Something Full Off Road Option Sheet 3 of 3	A
5020059_HW_FS_226	Phase 2 Option 3 Do Something Full Off Road Option Sheet 1 of 3	A
5020059_HW_FS_227	Phase 2 Option 3 Do Something Full Off Road Option Sheet 2 of 3	A
5020059_HW_FS_228	Phase 2 Option 3 Do Something Full Off Road Option Sheet 3 of 3	A
5020059_HW_FS_231	Phase 2 Option 4 Do Something Full Off Road Option Sheet 1 of 3	A
5020059_HW_FS_232	Phase 2 Option 4 Do Something Full Off Road Option Sheet 2 of 3	A
5020059_HW_FS_233	Phase 2 Option 4 Do Something Full Off Road Option Sheet 3 of 3	A
5020059_HW_FS_290	Phase 2 Option 5 Do Something Full Off Road Option Sheet 1 of 3	A
5020059_HW_FS_291	Phase 2 Option 5 Do Something Full Off Road Option Sheet 2 of 3	A
5020059_HW_FS_292	Phase 2 Option 5 Do Something Full Off Road Option Sheet 3 of 3	A

3 Construction Summary

WBS	Cambridge to Cambourne	Option 1a	Option 1b	Option 2a	Option 2b	Option 3a	Option 3b
1	DIRECT CONSTRUCTION COSTS	£ 52,736,385	£ 54,946,290	£ 44,505,783	£ 46,715,688	£ 50,939,181	£ 53,149,087
1.02	SERIES 200: SITE CLEARANCE	£ 692,634	£ 739,641	£ 619,257	£ 666,264	£ 815,094	£ 862,101
1.03	SERIES 300: FENCING	£ 110,053	£ 112,942	£ 110,053	£ 112,942	£ 110,053	£ 112,942
1.04	SERIES 400: ROAD RESTRAINT SYSTEMS (VEHICLE AND PEDESTRIAN)	£ -	£ -	£ -	£ -	£ -	£ -
1.05	SERIES 500: DRAINAGE AND SERVICE DUCTS	£ 6,840,091	£ 6,934,656	£ 5,494,488	£ 5,589,053	£ 6,586,794	£ 6,681,359
1.06	SERIES 600: EARTHWORKS	£ 6,135,782	£ 6,575,500	£ 5,196,599	£ 5,636,316	£ 6,155,102	£ 6,594,820
1.07	SERIES 700: PAVEMENTS	£ 6,880,918	£ 7,310,638	£ 6,663,761	£ 7,093,481	£ 8,726,943	£ 9,156,663
1.11	SERIES 1100: KERBS, FOOTWAYS AND PAVED AREAS	£ 14,968,683	£ 14,867,506	£ 10,456,923	£ 10,355,747	£ 10,584,247	£ 10,483,071
1.12	SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS	£ 282,020	£ 282,020	£ 220,764	£ 220,764	£ 250,428	£ 250,428
1.13	SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS	£ 1,680,124	£ 1,682,017	£ 1,367,625	£ 1,369,518	£ 1,889,014	£ 1,890,907
1.14	SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS	£ 3,100,910	£ 3,059,562	£ 2,541,957	£ 2,500,609	£ 3,408,014	£ 3,366,666
1.15	SERIES 1500: MOTORWAY COMMUNICATION	£ -	£ -	£ -	£ -	£ -	£ -
1.16	SERIES 1600: PILING AND EMBEDDED RETAINING WALLS	£ -	£ -	£ -	£ -	£ -	£ -
1.17	SERIES 1700: STRUCTURAL CONCRETE	£ -	£ -	£ -	£ -	£ -	£ -
1.18	SERIES 1800: STEELWORK FOR STRUCTURES	£ -	£ -	£ -	£ -	£ -	£ -
1.19	SERIES 1900: PROTECTION OF STEELWORK AGAINST CORROSION	£ -	£ -	£ -	£ -	£ -	£ -
1.20	SERIES 2000: WATERPROOFING FOR STRUCTURES	£ -	£ -	£ -	£ -	£ -	£ -
1.21	SERIES 2100: BRIDGE BEARINGS	£ -	£ -	£ -	£ -	£ -	£ -
1.23	SERIES 2300: BRIDGE EXPANSION JOINTS AND SEALING OF GAPS	£ -	£ -	£ -	£ -	£ -	£ -
1.24	SERIES 2400: BRICKWORK, BLOCKWORK AND STONEMASONRY	£ -	£ -	£ -	£ -	£ -	£ -
1.25	SERIES 2500: SPECIAL STRUCTURES	£ 8,892,016	£ 9,109,026	£ 8,892,016	£ 9,109,026	£ 8,892,016	£ 9,109,026
1.27	SERIES 2700: ACCOMMODATION WORKS	£ -	£ -	£ -	£ -	£ -	£ -
1.30	SERIES 3000: LANDSCAPING AND ECOLOGY	£ 3,153,154	£ 4,272,781	£ 2,942,340	£ 4,061,968	£ 3,521,477	£ 4,641,104
1.50	SERIES 5000: MAINTENANCE PAINTING OF STEELWORK	£ -	£ -	£ -	£ -	£ -	£ -
2	INDIRECT CONSTRUCTION COSTS	£ 25,459,105	£ 26,315,444	£ 21,356,150	£ 22,212,488	£ 24,563,199	£ 25,419,538
2.01	CONTRACTORS PRELIMINARIES	£ 10,547,277	£ 10,989,258	£ 8,901,157	£ 9,343,138	£ 10,187,836	£ 10,629,817
2.01a	CONTRACTORS PRELIMINARIES: TRAFFIC MANAGEMENT	£ 2,636,819	£ 2,747,315	£ 2,225,289	£ 2,335,784	£ 2,546,959	£ 2,657,454
2.01b	CONTRACTORS PRELIMINARIES: UPLIFT FOR OUT OF HOURS WORKING	£ 4,525,906	£ 4,525,906	£ 3,702,846	£ 3,702,846	£ 4,346,186	£ 4,346,186
2.02	CONTRACTORS OVERHEAD AND PROFIT	£ 7,749,103	£ 8,052,965	£ 6,526,858	£ 6,830,720	£ 7,482,218	£ 7,786,080
	BASE COST ESTIMATE (DIRECT COSTS + INDIRECT COSTS)	£ 78,195,490	£ 81,261,734	£ 65,861,933	£ 68,928,177	£ 75,502,380	£ 78,568,624
3	DESIGN COSTS	£ 12,511,278	£ 13,001,877	£ 10,537,909	£ 11,028,508	£ 12,080,381	£ 12,570,980
3.01	Stated Project Phase Design Fees, inc Testing and Commissioning	£ 12,511,278	£ 13,001,877	£ 10,537,909	£ 11,028,508	£ 12,080,381	£ 12,570,980
3.02		£ -	£ -	£ -	£ -	£ -	£ -
4	PROJECT MANAGEMENT COSTS	£ 9,202,518	£ 9,563,727	£ 7,751,249	£ 8,112,458	£ 8,885,624	£ 9,246,833
4.01	Client Project Organisation	£ 9,202,518	£ 9,563,727	£ 7,751,249	£ 8,112,458	£ 8,885,624	£ 9,246,833
5	OTHER PROJECT COSTS	£ 1,318,410	£ 1,373,657	£ 1,112,645	£ 1,167,892	£ 1,273,480	£ 1,328,727
5.01	Environmental Mitigations (2.5% of Base Cost Estimate)	£ 1,318,410	£ 1,373,657	£ 1,112,645	£ 1,167,892	£ 1,273,480	£ 1,328,727
6	INFLATION	£ 1,518,415	£ 1,578,015	£ 1,278,956	£ 1,338,556	£ 1,466,128	£ 1,525,727
6.01	Base date 4Q18 ; 3% annual inflation applied to 2Q2019	£ 1,518,415	£ 1,578,015	£ 1,278,956	£ 1,338,556	£ 1,466,128	£ 1,525,727
7	TAXATION	£ -	£ -	£ -	£ -	£ -	£ -
7.01	Stated Taxes	£ -	£ -	£ -	£ -	£ -	£ -
	PROJECT COST ESTIMATE	£ 102,746,111	£ 106,779,010	£ 86,542,691	£ 90,575,590	£ 99,207,993	£ 103,240,892
8	RISK & CONTINGENCY COSTS						
8.01	P50 Contingency	£ 19,521,761	£ 20,288,012	£ 16,443,111	£ 17,209,362	£ 18,849,519	£ 19,615,769
8.02	P80 Contingency	£ 25,686,528	£ 26,694,753	£ 21,635,673	£ 22,643,898	£ 24,801,998	£ 25,810,223
8.03	P90 Contingency	£ 29,796,372	£ 30,965,913	£ 25,097,380	£ 26,266,921	£ 28,770,318	£ 29,939,659
8.04	Optimism Bias	£ -	£ -	£ -	£ -	£ -	£ -
	ANTICIPATED FINAL COST (P50)	£ 122,267,872	£ 127,067,022	£ 102,985,802	£ 107,784,952	£ 118,057,511	£ 122,856,662
	ANTICIPATED FINAL COST (P80)	£ 128,432,639	£ 133,473,763	£ 108,178,364	£ 113,219,488	£ 124,009,991	£ 129,051,115
	ANTICIPATED FINAL COST (P90)	£ 132,542,483	£ 137,744,923	£ 111,640,071	£ 116,842,511	£ 127,978,311	£ 133,180,751

4 Whole Life Costs Summary

5 Phase 1

Cambridge to Cambourne

Phase 1

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
INITIAL CONSTRUCTION					
SERIES 200: SITE CLEARANCE					350,642
General Site Clearance	76,177	m²	2.16	164,542	
Take up PCC Kerb and dispose of off site	581	m	9.42	5,470	
Take up and remove from site; 8m mounting height tubular galvanised steel column complete with a post top mounted luminaire	30	nr	270.99	8,130	
Bridge over Bin Brook Crossing					
Demolition of existing bridge over Bin Brook Crossing	345	m²	500.00	172,500	
SERIES 300: FENCING					81,668
Anti Dazzle Fencing (Charles Babbage Road) assumed chain link fence	501	m	20.31	10,181	
Supply and install Timber Post & Four Rail Fencing as per Highways Construction Detail Drawing H3. Timber treated to H4 BS8417. Posts incised for ground contact. Desired 30 year life.	2,340	m	30.55	71,487	
SERIES 500: DRAINAGE AND SERVICE DUCTS					2,761,361
<u>Busway</u>					
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	476	nr	491.64	234,021	
150mm diameter carrier drain with type S bed and surround; depth to invert not exceeding 2m	1,571	m	47.72	74,964	
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	10,473	m	84.11	880,863	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	10	nr	277.32	2,773	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	112	nr	3,084.61	345,501	
Drainage interceptor - Allowance of 1 per 1000m of drainage	10	nr	10,000.00	100,000	
Outfalls - Allowance of 1 per 1000m of drainage	10	nr	10,000.00	100,000	
<u>Maintenance track /Cycleway</u>					
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	4,749	m	84.11	399,470	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	10	nr	277.32	2,773	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	56	nr	3,084.61	172,738	
<u>Dual Carriageway</u>					
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	966	m	84.11	81,238	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	1	nr	277.32	277	
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	49	nr	491.64	24,090	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	12	nr	3,084.61	37,015	
Drainage interceptor - Allowance of 1 per 1000m of drainage	1	nr	10,000.00	10,000	
Outfalls - Allowance of 1 per 1000m of drainage	1	nr	10,000.00	10,000	
Culverts - Allowance	1	nr	25,000.00	25,000	
Ditch (assumed 1.3m³ per m with erosion control matting anchored in U-shaped trench, 100mm thick topsoil and seeding)	3,239	m	80.47	260,637	
SERIES 600: EARTHWORKS					2,033,434
<u>Excavation of Topsoil</u>					

Excavation of acceptable material Class 5A Topsoil 150mm	11,427	m³	5.61	64,103	
<u>General Excavation</u>					
Excavation to bus stop subformation; Excavation of acceptable material; excluding Class 5A; normal material, excluding hard or artificially hard material, <2500m³	342	m³	2.54	869	
Excavation to busway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m³	27,798	m³	1.49	41,420	
Excavation to maintenance track subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m³	11,969	m³	1.49	17,833	
Excavation to carriageway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m³	4,417	m³	1.49	6,581	
Excavation to footpath subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; < 2500m³	1,069	m³	2.54	2,715	
Excavation to attenuation pond; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m³	5,554	m³	1.49	8,276	
<u>Imported Fill</u>					
Imported acceptable material; Capping material; Class 6F2; for carriageway, 240mm thick	1,738	m³	40.64	70,626	
<u>Compaction of Material</u>					
Compaction of fill material to large areas	1,738	m³	3.50	6,082	
<u>Disposal of Material</u>					
Disposal of acceptable Class 5A topsoil	7,073	m³	28.23	199,670	
Disposal of acceptable material excluding Class 5A	51,149	m³	28.23	1,443,945	
<u>Topsoiling and Storage of Topsoil</u>					
Topsoiling; Class 5A material excavated from site; 150mm thick; Sloping at 10 eg or less to the horizontal, >5000m² (>750m³)	29,024	m²	1.10	31,926	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material; bus stops	360	m²	1.10	396	
Completion of sub-formation on acceptable material; bus way	38,080	m²	1.10	41,888	
Completion of sub-formation on acceptable material; maintenance track/cycleway	18,998	m²	1.10	20,898	
Completion of sub-formation on acceptable material; carriageway	7,241	m²	1.10	7,965	
Completion of sub-formation on acceptable material; footpath	4,751	m²	1.10	5,226	
<u>Lining of Watercourses</u>					
Lining of new watercourse; attenuation pond	6,747	m²	9.34	63,016	
SERIES 700: PAVEMENTS					2,142,769
<u>Sub-Base</u>					
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus way	38,080	m²	9.86	375,469	
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus stop	360	m²	9.86	3,550	
Imported granular sub-base; Type 1 aggregate; 200mm depth; maintenance track/cycleway	18,998	m²	9.86	187,320	
Imported granular sub-base; Type 1 aggregate; 200mm depth; carriageway	7,241	m²	9.86	71,396	
<u>Maintenance Track / Cycleway Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick in carriageway	18,998	m²	25.44	483,297	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway	18,998	m²	10.72	203,721	
40mm Thin Surface course system	18,998	m²	11.12	211,165	
<u>Carriageway Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick in carriageway	7,241	m²	25.44	184,201	

AC20 Dense binder course 40/60 Rec 60mm thick in carriageway	7,241	m²	10.72	77,645	
40mm Thin Surface course system	6,893	m²	11.12	76,614	
Master tint- Red surface course (40mm)	348	m²	44.75	15,574	
Resurfacing: 40mm Thin Surface course system	7,228	m²	11.12	80,378	
<u>Works to Existing bridge over M11</u>					
Resurfacing: 40mm Thin Surface course system	12,041	m²	11.12	133,900	
<u>Cold Milling</u>					
Cold milling/planning; 40mm thick; existing carriageway; including disposal	7,228	m²	2.00	14,456	
Cold milling/planning; 40mm thick; existing bridge over M11; including disposal	12,041	m²	2.00	24,082	
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS					6,457,380
<u>Slipform Guided Bus Route</u>					
Steel Reinforcement supply and fit for bus route	571	t	1,127.46	644,051	
Slip forming the mainline route. Excluding post grinding	9,521	m	409.99	3,903,340	
Precision post grinding to achieve suitable gauge tolerance	9,521	m	128.12	1,219,794	
Precision post grinding to achieve suitable gauge tolerance	90	m	128.12	11,531	
In situ works for car traps/entry and exit splays	432	m	1,024.96	442,784	
<u>Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks</u>					
Precast concrete kerb; half battered (HB2 125 x 255 x 915mm) laid straight or curved	2,857	m	20.19	57,686	
Precast concrete edgings; Laid straight or curved to radius exceeding 12m; 50mm x 150mm	754	m	13.72	10,340	
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	4,751	m²	35.33	167,853	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					130,844
<u>Traffic Signs</u>					
Signs - allowance	1	nr	2,000.00	2,000	
<u>Road Markings</u>					
Road Marking (Lining Crew) - allowance: to include ped crossings/adjoining roads/maintenance bays, traffic calming measures etc	11	shifts	1,000.00	11,000	
<u>Traffic Signal Installations</u>					
Traffic signal installation; including; traffic signal head, 4m swan neck pole, NAL socket, pedestrian push button, pedestrian signal indicator, infrared detector, traffic detection loop	17	nr	5,332.00	90,644	
Traffic signal installation; controller cabinet	8	nr	3,400.00	27,200	
SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS					844,699
<u>Busway and Road</u>					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	268	nr	1,671.12	447,860	

<u>Maintenance track/ Cycle way/ Footway</u>					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	237	nr	1,671.12	396,839	
SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS					1,542,592
<u>Busway and Road</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	5,341	m	27.52	146,985	
Cabling 3 core XLPE/SWA/PVC- Allowance	9,629	m	33.14	319,105	
Terminations at each column- Allowance	268	Item	86.83	23,270	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	14	nr	3,382.51	47,355	
Telensa CMS node - Allowance	268	nr	153.22	41,063	
New DNO Connections - Allowance	14	nr	15,000.00	210,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	3	nr	356.45	1,069	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	53	nr	575.75	30,515	
<u>Maintenance track/ Cycle way/ Footway</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	4,749	m	27.52	130,703	
Cabling 3 core XLPE/SWA/PVC- Allowance	8,549	m	33.14	283,310	
Terminations at each column - Allowance	237	Item	86.83	20,619	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	12	nr	3,382.51	40,590	
Telensa CMS node - Allowance	237	nr	153.22	36,385	
DNO new connections - Allowance	12	nr	15,000.00	180,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	12	nr	356.45	4,277	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	47	nr	575.75	27,345	
SERIES 1700: STRUCTURAL CONCRETE					-
Batching plant	1	item		-	
SERIES 2500: SPECIAL STRUCTURES					7,905,295
Bus stops (25m in length), including fittings	4	nr	41,850.00	167,400	
Ticket machine @ Park and Ride	2	nr	35,000.00	70,000	
Green bridge over M11					
Construct new overpass; including foundations, abutments, wingwalls, deck, parapets, approaches and drainage. Deck Area measured; Difficult Complexity	1,112	m²	5,500.00	6,115,395	
Bridge over Bin Brook Crossing					
Construct new bridge; including foundations, abutments, wingwalls, deck, parapets, approaches and drainage. Deck Area measured; Normal Complexity	345	m²	4,500.00	1,552,500	
SERIES 3000: LANDSCAPING AND ECOLOGY					1,657,605
Landscaping	79,937	m²	20.00	1,598,744	
1.2m high clipped hedgerow (along the busway)	1,678	m	15.55	26,092	
Meadow planting- 100% meadow (near Cambridge Road)	19,593	m²	0.77	15,182	
Extension to plantation woodland (across Top Pitch)	9,431	m²	1.33	12,570	
Green bridge over M11					
Allowance for planting on the bridge (assumed bare rooted native species whips as screen)	273	m²	18.38	5,017	
Total				25,908,289	25,908,289

30% SURFACING RENEWALS					
SERIES 200: SITE CLEARANCE					20,082
General Site Clearance	9,297	m ²	2.16	20,082	
SERIES 600: EARTHWORKS					127,528
<u>Excavation</u>					
Excavation of artificial hard material; Maintenance Track/ Cycle Way	1,539	m ³	11.52	17,727	
Excavation of artificial hard material; Carriageway	587	m ³	11.52	6,757	
Excavation of artificial hard material; Footpaths	299	m ³	11.52	3,448	
Extra over for breaking out surfacing	2,425	m ³	9.74	23,616	
<u>Disposal of Material</u>					
Disposal of acceptable material excluding Class 5A	2,425	m ³	28.23	68,448	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	9,297	m ²	0.81	7,531	
SERIES 700: PAVEMENTS					372,337
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth (top up)	186	m ²	0.99	183	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	7,871	m ²	25.44	200,249	
AC20 Dense binder course 40/60 Rec 60mm thick	7,871	m ²	10.72	84,410	
40mm Thin Surface course system	7,871	m ²	11.12	87,494	
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS					50,356
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	1,425	m ²	35.33	50,356	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					4,000
<u>Road Markings</u>					
Road Marking (Lining Crew)	4	shifts	1000.00	4,000	
			Total	574,302	

100% ROAD RESURFACE, INCLUDING BRIDGE DECKS					
SERIES 200: SITE CLEARANCE					95,341
General Site Clearance	44,139	m ²	2.16	95,341	
SERIES 700: PAVEMENTS					600,975
Cold Milling					
Cold milling/planning; 40mm thick	44,139	m ²	2.00	88,279	
Pavement; Car Park					
<u>Pavement</u>					
Tack coat	44,139	m ²	0.50	22,070	
40mm Thin Surface course system	44,139	m ²	11.12	490,627	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					11,000
<u>Road Markings</u>					
Road Marking (Lining Crew)	11	shifts	1000.00	11,000	
Total				707,316	
BRIDGE DECKS FULL DEPTH RESURFACING					
SERIES 200: SITE CLEARANCE					3,147
General Site Clearance	1,457	m ²	2.16	3,147	
SERIES 700: PAVEMENTS					87,820
Cold Milling					
Cold milling/planning; 100mm thick	1,457	m ²	5.00	7,284	
Cold milling/planning; 150mm thick	1,457	m ²	7.50	10,927	
Pavement; Car Park					
<u>Pavement</u>					
Tack coat	1,457	m ²	0.50	728	
AC32 HDM base 40/60 Rec 150mm thick	1,457	m ²	25.44	37,063	
AC20 Dense binder course 40/60 Rec 60mm thick	1,457	m ²	10.72	15,623	
40mm Thin Surface course system	1,457	m ²	11.12	16,194	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					2,000
<u>Road Markings</u>					
Road Marking (Lining Crew)	2	shifts	1000.00	2,000	
SERIES 2000: WATERPROOFING FOR STRUCTURES					36,422
Spray applied waterproofing system	1,457	m ²	25.00	36,422	
Total				129,389	

6 Option 1

Cambridge to Cambourne

Phase 2 Option 1

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
INITIAL CONSTRUCTION					
SERIES 200: SITE CLEARANCE					204,307
General Site Clearance	94,587	m ²	2.16	204,307	
SERIES 500: DRAINAGE AND SERVICE DUCTS					2,978,630
<u>Busway</u>					
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	569	nr	491.64	279,918	
150mm diameter carrier drain with type S bed and surround; depth to invert not exceeding 2m	1,879	m	47.72	89,660	
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	12,526	m	84.11	1,053,546	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	11	nr	277.32	3,051	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	134	nr	3,084.61	413,233	
Drainage interceptor - Allowance of 1 per 1000m of drainage	11	nr	10,000.00	110,000	
Outfalls - Allowance of 1 per 1000m of drainage	11	nr	10,000.00	110,000	
<u>Dual Carriageway</u>					
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	5,320	m	84.11	447,454	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	6	nr	277.32	1,664	
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	266	nr	491.64	130,776	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	63	nr	3,084.61	194,330	
Drainage interceptor - Allowance of 1 per 1000m of drainage	6	nr	10,000.00	60,000	
Outfalls - Allowance of 1 per 1000m of drainage	6	nr	10,000.00	60,000	
Culverts - Allowance	1	nr	25,000.00	25,000	
SERIES 600: EARTHWORKS					2,333,248
<u>Excavation of Topsoil</u>					
Excavation of acceptable material Class 5A Topsoil 150mm	14,188	m ³	5.61	79,595	
<u>General Excavation</u>					
Excavation to busway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	33,250	m ³	1.49	49,543	
Excavation to bus stop subformation; Excavation of acceptable material; excluding Class 5A; normal material, excluding hard or artificially hard material, <2500m ³	342	m ³	2.54	869	
Excavation to carriageway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	11,845	m ³	1.49	17,649	
Excavation to attenuation pond; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	6,908	m ³	1.49	10,293	
<u>Imported Fill</u>					
Imported acceptable material; Capping material; Class 6F2; for carriageway, 240mm thk	4,660	m ³	40.64	189,390	

<u>Compaction of Material</u>				
Compaction of fill material to large areas	4,660	m ³	3.50	16,311
<u>Disposal of Material</u>				
Disposal of acceptable Class 5A topsoil	10,333	m ³	28.23	291,709
Disposal of acceptable material excluding Class 5A	52,345	m ³	28.23	1,477,697
<u>Topsoiling and Storage of Topsoil</u>				
Topsoiling; Class 5A material excavated from site; 150mm thick; Sloping at 10 eg or less to the horizontal, >5000m ² (>750m ³)	25,698	m ²	1.10	28,268
<u>Completion of Formation and Sub-formation</u>				
Completion of sub-formation on acceptable material; bus stops	360	m ²	1.10	396
Completion of sub-formation on acceptable material; bus way	45,552	m ²	1.10	50,107
Completion of sub-formation on acceptable material; carriageway	19,417	m ²	1.10	21,359
Completion of sub-formation on acceptable material; footpath	21,020	m ²	1.10	23,122
<u>Lining of Watercourses</u>				
Lining of new watercourse; attenuation pond	8,238	m ²	9.34	76,941
SERIES 700: PAVEMENTS				1,865,715
<u>Sub-Base</u>				
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus way	45,552	m ²	9.86	449,143
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus stop	360	m ²	9.86	3,550
Imported granular sub-base; Type 1 aggregate; 200mm depth; carriageway	19,417	m ²	9.86	191,452
<u>Dual carriageway</u>				
AC32 HDM base 40/60 Rec 150mm thick in carriageway	19,417	m ²	25.44	493,981
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway	19,417	m ²	10.72	208,225
40mm Thin Surface course system	19,417	m ²	11.12	215,833
Resurfacing: 40mm Thin Surface course system	23,135	m ²	11.12	257,261
<u>Cold Milling</u>				
Cold milling/planning; 40mm thick; existing carriageway; including disposal	23,135	m ²	2.00	46,270
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS				8,076,886
<u>Slipform Guided Bus Route</u>				
Steel Reinforcement supply and fit for bus route	683	t	1,127.46	770,310
Slip forming the mainline route. Excluding post grinding	11,387	m	409.99	4,668,546
Precision post grinding to achieve suitable gauge tolerance	11,387	m	128.12	1,458,921
Precision post grinding to achieve suitable gauge tolerance	90	m	128.12	11,531
In situ works for car traps/entry and exit splays	216	m	1,024.96	221,392
<u>Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks</u>				
Precast concrete kerb; half battered (HB2 125 x 255 x 915mm) laid straight or curved	5,320	m	20.19	107,408
Precast concrete edgings; Laid straight or curved to radius exceeding 12m; 50mm x 150mm	7,007	m	13.72	96,133

<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	21,020	m ²	35.33	742,645	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					145,176
<u>Traffic Signs</u>					
Signs - allowance	1	nr	5,000.00	5,000	
<u>Road Markings</u>					
Road marking - allowance: to include ped crossings/adjoining roads/maintenance	17	shifts	1,000.00	17,000	
<u>Traffic Lights</u>					
Traffic signal installation; including; traffic signal head, 4m swan neck pole, NAL socket, pedestrian push button, pedestrian signal indicator, infrared detector, traffic detection loop	18	nr	5,332.00	95,976	
Traffic signal installation; controller cabinet	8	nr	3,400.00	27,200	
SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS					698,528
<u>Busway</u>					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	285	nr	1,671.12	476,269	
<u>Dual carriageway</u>					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	133	nr	1,671.12	222,259	
SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS					1,283,264
<u>Busway</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	5,694	m	27.52	156,686	
Cabling 3 core XLPE/SWA/PVC- Allowance	10,254	m	33.14	339,803	
Terminations at each column- Allowance	285	Item	86.83	24,747	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	15	nr	3,382.51	50,738	
Telensa CMS node - Allowance	285	nr	153.22	43,668	
New DNO Connections - Allowance	15	nr	15,000.00	225,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	3	nr	356.45	1,069	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	57	nr	575.75	32,818	
<u>Dual carriageway</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	2,660	m	27.52	73,201	
Cabling 3 core XLPE/SWA/PVC- Allowance	4,788	m	33.14	158,672	
Terminations at each column- Allowance	133	Item	86.83	11,548	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	7	nr	3,382.51	23,678	
Telensa CMS node - Allowance	133	nr	153.22	20,378	
New DNO Connections - Allowance	7	nr	15,000.00	105,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	2	nr	356.45	713	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	27	nr	575.75	15,545	
SERIES 1700: STRUCTURAL CONCRETE					-
Batching plant	1	item		-	

SERIES 2500: SPECIAL STRUCTURES					307,400
Bus stops (25m in length), including fittings	4	nr	41,850.00	167,400	
Ticket Machines - Allowance	4	nr	35,000.00	140,000	
SERIES 3000: LANDSCAPING AND ECOLOGY					1,457,620
Landscaping	71,119	m ²	20.00	1,422,386	
Planting normal sized shrubs (3L pots) and trees	469	m ²	20.00	9,370	
Meadow planting (90% wildflower, 10% area to include trees)	18,525	m ²	0.81	14,929	
Extension to plantation woodland	7,173	m ²	1.33	9,560	
Climbers and trailers	275	m	5.00	1,375	
			Total	19,350,775	

30% SURFACING RENEWALS					
SERIES 200: SITE CLEARANCE					26,203
General Site Clearance	12,131	m ²	2.16	26,203	
SERIES 600: EARTHWORKS					153,201
<u>Excavation</u>					
Excavation of artificial hard material; Carriageway	1,573	m ³	11.52	18,118	
Excavation of artificial hard material; Footpaths	1,324	m ³	11.52	15,255	
Extra over for breaking out surfacing	2,897	m ³	9.74	28,217	
<u>Disposal of Material</u>					
Disposal of acceptable material excluding Class 5A	2,897	m ³	28.23	81,783	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	12,131	m ²	0.81	9,826	
SERIES 700: PAVEMENTS					275,651
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth car park (top up)	243	m ²	0.99	239	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	5,825	m ²	25.44	148,194	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	5,825	m ²	10.72	62,468	
40mm Thin Surface course system	5,825	m ²	11.12	64,750	
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS					222,794
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	6,306	m ²	35.33	222,794	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					6,000
<u>Road Markings</u>					
Road Marking	6	shifts	1000.00	6,000	
			Total	683,849	

100% ROAD RESURFACE					
SERIES 200: SITE CLEARANCE					137,317
General Site Clearance	63,573	m ²	2.16	137,317	
SERIES 700: PAVEMENTS					865,569
Cold Milling					
Cold milling/planning; 40mm thick	63,573	m ²	2.00	127,145	
Pavement; Car Park					
<u>Pavement</u>					
Tack coat	63,573	m ²	0.50	31,786	
40mm Thin Surface course system	63,573	m ²	11.12	706,637	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					17,000
<u>Road Markings</u>					
Road Marking	17	shifts	1000.00	17,000	
			Total	1,019,886	

7 Option 2

Cambridge to Cambourne

Phase 2 Option 2

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
INITIAL CONSTRUCTION					
SERIES 200: SITE CLEARANCE					130,931
General Site Clearance	60,616	m ²	2.16	130,931	
SERIES 500: DRAINAGE AND SERVICE DUCTS					1,633,027
<u>Busway</u>					
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	208	nr	491.64	102,181	
150mm diameter carrier drain with type S bed and surround; depth to invert not exceeding 2m	686	m	47.72	32,729	
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	4,572	m	84.11	384,586	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	4	nr	277.32	1,109	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	49	nr	3,084.61	150,846	
Drainage interceptor - Allowance of 1 per 1000m of drainage	4	nr	10,000.00	40,000	
Outfalls - Allowance of 1 per 1000m of drainage	4	nr	10,000.00	40,000	
<u>Dual Carriageway</u>					
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	5,058	m	84.11	425,450	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	6	nr	277.32	1,664	
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	253	nr	491.64	124,385	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	60	nr	3,084.61	185,077	
Drainage interceptor - Allowance of 1 per 1000m of drainage	6	nr	10,000.00	60,000	
Outfalls - Allowance of 1 per 1000m of drainage	6	nr	10,000.00	60,000	
Culverts - Allowance	1	nr	25,000.00	25,000	
SERIES 600: EARTHWORKS					1,394,064
<u>Excavation of Topsoil</u>					
Excavation of acceptable material Class 5A Topsoil 150mm	9,092	m ³	5.61	51,008	
<u>General Excavation</u>					
Excavation to busway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m3	12,138	m ³	1.49	18,085	
Excavation to bus stop subformation; Excavation of acceptable material; excluding Class 5A; normal material, excluding hard or artificially hard material, <2500m3	342	m ³	2.54	869	
Excavation to carriageway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m3	11,262	m ³	1.49	16,781	
Excavation to attenuation pond; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m3	4,411	m ³	1.49	6,573	
<u>Imported Fill</u>					
Imported acceptable material; Capping material; Class 6F2; for carriageway, 240mm thk	4,431	m ³	40.64	180,077	
<u>Compaction of Material</u>					
Compaction of fill material to large areas	4,431	m ³	3.50	15,509	
<u>Disposal of Material</u>					
Disposal of acceptable Class 5A topsoil	6,314	m ³	28.23	178,235	
Disposal of acceptable material excluding Class 5A	28,153	m ³	28.23	794,766	

<u>Topsoiling and Storage of Topsoil</u>				
Topsoiling; Class 5A material excavated from site; 150mm thick; Sloping at 10 eg or less to the horizontal, >5000m2 (>750m3)	18,525	m ²	1.10	20,378
<u>Completion of Formation and Sub-formation</u>				
Completion of sub-formation on acceptable material; bus stops	360	m ²	1.10	396
Completion of sub-formation on acceptable material; bus way	16,624	m ²	1.10	18,286
Completion of sub-formation on acceptable material; carriageway	18,463	m ²	1.10	20,309
Completion of sub-formation on acceptable material; footpath	19,695	m ²	1.10	21,665
<u>Lining of Watercourses</u>				
Lining of new watercourse; attenuation pond	5,474	m ²	9.34	51,128
SERIES 700: PAVEMENTS				1,648,558
<u>Sub-Base</u>				
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus way	3,325	m ³	46.50	154,603
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus stop	72	m ³	46.50	3,348
Imported granular sub-base; Type 1 aggregate; 200mm depth; carriageway	3,693	m ³	46.50	171,706
<u>Dual carriageway</u>				
AC32 HDM base 40/60 Rec 150mm thick in carriageway	18,463	m ²	25.44	469,690
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway	18,463	m ²	10.72	197,986
40mm Thin Surface course system	18,463	m ²	11.12	205,220
Resurfacing: 40mm Thin Surface course system	33,994	m ²	11.12	378,016
<u>Cold Milling</u>				
Cold milling/planning; 40mm thick; existing carriageway	33,994	m ²	2.00	67,989
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS				3,565,126
<u>Slipform Guided Bus Route</u>				
Steel Reinforcement supply and fit for bus route	249	t	1,127.46	281,194
Slip forming the mainline route. Excluding post grinding	4,157	m	409.99	1,704,203
Precision post grinding to achieve suitable gauge tolerance	4,157	m	128.12	532,564
Precision post grinding to achieve suitable gauge tolerance	90	m	128.12	11,531
In situ works for car traps/entry and exit splays	144	m	1,024.96	147,595
<u>Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks</u>				
Precast concrete kerb; half battered (HB2 125 x 255 x 915mm) laid straight or curved	5,058	m	20.19	102,126
Precast concrete edgings; Laid straight or curved to radius exceeding 12m; 50mm x 150mm	6,565	m	13.72	90,074
<u>Footways and Paved Areas</u>				
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	19,695	m ²	35.33	695,840
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS				83,920

Traffic Signs					
Signs - allowance	1	item	5,000.00	5,000	
Road Markings					
Road marking - allowance: to include ped crossings/adjoining roads/maintenance bays, traffic calming measures etc	12	shifts	1,000.00	12,000	
Traffic Lights					
Traffic signal installation; including: traffic signal head, 4m swan neck pole, NAL socket, pedestrian push button, pedestrian signal indicator, infrared detector, traffic detection loop	10	nr	5,332.00	53,320	
Traffic signal installation; controller cabinet	4	nr	3,400.00	13,600	
SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS					386,029
Busway					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40km neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	104	nr	1,671.12	173,796	
Dual carriageway					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40km neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	127	nr	1,671.12	212,232	
SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS					724,311
Busway					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	2,078	m	27.52	57,197	
Cabling 3 core XLPE/SWA/PVC- Allowance	3,742	m	33.14	124,022	
Terminations at each column- Allowance	104	Item	86.83	9,030	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	6	nr	3,382.51	20,295	
Telensa CMS node - Allowance	104	nr	153.22	15,935	
New DNO Connections - Allowance	6	nr	15,000.00	90,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	2	nr	356.45	713	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	21	nr	575.75	12,091	
Dual carriageway					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	2,529	m	27.52	69,602	
Cabling 3 core XLPE/SWA/PVC- Allowance	4,561	m	33.14	151,156	
Terminations at each column- Allowance	127	Item	86.83	11,027	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	7	nr	3,382.51	23,678	
Telensa CMS node - Allowance	127	nr	153.22	19,459	
New DNO Connections - Allowance	7	nr	15,000.00	105,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	2	nr	356.45	713	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	25	nr	575.75	14,394	
SERIES 1700: STRUCTURAL CONCRETE					-
Batching plant	1	item		-	
SERIES 2500: SPECIAL STRUCTURES					307,400
Bus stops (25m in length), including fittings	4	nr	41,850.00	167,400	
Ticket Machines - Allowance	4	nr	35,000.00	140,000	
SERIES 3000: LANDSCAPING AND ECOLOGY					1,246,807
Landscaping	61,570	m ²	20.00	1,231,393	
Planting normal sized shrubs (3L pots) and trees	24	m ²	20.00	485	
Meadow planting (90% wildflower, 10% area to include tress)	18,525	m ²	0.81	14,929	
Total				11,120,172	11,120,172

30% SURFACING RENEWALS					
SERIES 200: SITE CLEARANCE					24,726
General Site Clearance	11,447	m ²	2.16	24,726	
SERIES 600: EARTHWORKS					144,691
<u>Excavation</u>					
Excavation of artificial hard material; Carriageway	1,496	m ³	11.52	17,228	
Excavation of artificial hard material; Footpaths	1,241	m ³	11.52	14,294	
Extra over for breaking out surfacing	2,736	m ³	9.74	26,651	
<u>Disposal of Material</u>					
Disposal of acceptable material excluding Class 5A	2,736	m ³	28.23	77,245	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	11,447	m ²	0.81	9,272	
SERIES 700: PAVEMENTS					262,095
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth car park (top up)	229	m ²	0.99	226	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	5,539	m ²	25.44	140,907	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	5,539	m ²	10.72	59,396	
40mm Thin Surface course system	5,539	m ²	11.12	61,566	
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS					208,752
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	5,909	m ²	35.33	208,752	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					4,000
<u>Road Markings</u>					
Road Marking	4	shifts	1000.00	4,000	
			Total	644,264	

100% ROAD RESURFACE					
SERIES 200: SITE CLEARANCE					155,849
General Site Clearance	72,152	m ²	2.16	155,849	
SERIES 700: PAVEMENTS					982,384
Cold Milling					
Cold milling/planning; 40mm thick	72,152	m ²	2.00	144,305	
Pavement; Car Park					
<u>Pavement</u>					
Tack coat	72,152	m ²	0.50	36,076	
40mm Thin Surface course system	72,152	m ²	11.12	802,003	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					12,000
<u>Road Markings</u>					
Road Marking	12	shifts	1000.00	12,000	
Total				1,150,234	

8 Option 3

Cambridge to Cambourne

Phase 2 Option 3

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
INITIAL CONSTRUCTION					
SERIES 200: SITE CLEARANCE					326,768
General Site Clearance	85,779	m ²	2.16	185,283	
Take up PCC Kerb and dispose of off site	6,159	m	9.42	58,020	
Take up and remove from site; 8m mounting height tubular galvanised steel column complete with a post top mounted luminaire	308	nr	270.99	83,465	
SERIES 500: DRAINAGE AND SERVICE DUCTS					2,725,333
<u>Busway</u>					
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	208	nr	491.64	102,181	
150mm diameter carrier drain with type S bed and surround; depth to invert not exceeding 2m	686	m	47.72	32,729	
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	4,572	m	84.11	384,586	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	4	nr	277.32	1,109	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	49	nr	3,084.61	150,846	
Drainage interceptor - Allowance of 1 per 1000m of drainage	4	nr	10,000.00	40,000	
Outfalls - Allowance of 1 per 1000m of drainage	4	nr	10,000.00	40,000	
<u>Dual Carriageway</u>					
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	11,394	m	84.11	958,342	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	14	nr	277.32	3,882	
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	570	nr	491.64	280,235	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	135	nr	3084.61	416,422	
Drainage interceptor - Allowance of 1 per 1000m of drainage	12	nr	10,000.00	120,000	
Outfalls - Allowance of 1 per 1000m of drainage	12	nr	10,000.00	120,000	
Culverts - Allowance	3	nr	25,000.00	75,000	
SERIES 600: EARTHWORKS					2,352,567
<u>Excavation of Topsoil</u>					
Excavation of acceptable material Class 5A Topsoil 150mm	12,867	m ³	5.61	72,183	
<u>General Excavation</u>					
Excavation to busway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	12,138	m ³	1.49	18,085	
Excavation to bus stop subformation; Excavation of acceptable material; excluding Class 5A; normal material, excluding hard or artificially hard material, <2500m ³	342	m ³	2.54	869	
Excavation to carriageway subformation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	25,369	m ³	1.49	37,799	
Excavation to attenuation pond; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	6,260	m ³	1.49	9,328	
Extra over for breaking out surfacing	8,499	m ³	9.74	82,776	
<u>Imported Fill</u>					
Imported acceptable material; Capping material; Class 6F2; for carriageway, 240mm thk	9,981	m ³	40.64	405,630	
<u>Compaction of Material</u>					
Compaction of fill material to large areas	9,981	m ³	3.50	34,934	

<u>Disposal of Material</u>					
Disposal of acceptable Class 5A topsoil	9,334	m ³	28.23	263,501	
Disposal of acceptable material excluding Class 5A	44,108	m ³	28.23	1,245,182	
<u>Topping and Storage of Topsoil</u>					
Topping; Class 5A material excavated from site; 150mm thick; Sloping at 10 eg or less to the horizontal, >5000m ² (>750m ³)	23,552	m ²	1.10	25,907	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material; bus stops	360	m ²	1.10	396	
Completion of sub-formation on acceptable material; bus way	16,624	m ²	1.10	18,286	
Completion of sub-formation on acceptable material; carriageway	41,588	m ²	1.10	45,747	
Completion of sub-formation on acceptable material; footpath	19,681	m ²	1.10	21,649	
<u>Lining of Watercourses</u>					
Lining of new watercourse; attenuation pond	7,526	m ²	9.34	70,295	
SERIES 700: PAVEMENTS					3,711,739
<u>Sub-Base</u>					
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus way	16,624	m ²	9.46	157,263	
Imported granular sub-base; Type 1 aggregate; 200mm depth; bus stop	360	m ²	9.46	3,406	
Imported granular sub-base; Type 1 aggregate; 200mm depth; carriageway	41,588	m ²	9.46	393,422	
<u>Dual carriageway</u>					
AC32 HDM base 40/60 Rec 150mm thick in carriageway	41,588	m ²	25.44	1,057,993	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway	41,588	m ²	10.72	445,970	
40mm Thin Surface course system	19,107	m ²	11.12	212,382	
Master tint- Red surface course (40mm)- bus lane	22,481	m ²	44.75	1,005,992	
Resurfacing: 40mm Thin Surface course system	33,179	m ²	11.12	368,952	
<u>Cold Milling</u>					
Cold milling/planning; 40mm thick; existing carriageway; including disposal	33,179	m ²	2.00	66,358	
SERIES 1100: KERBS, FOOTWAYS AND PAVED AREAS					3,692,451
<u>Slipform Guided Bus Route</u>					
Steel Reinforcement supply and fit for bus route	249	t	1,127.46	281,194	
Slip forming the mainline route. Excluding post grinding	4,157	m	409.99	1,704,203	
Precision post grinding to achieve suitable gauge tolerance	4,157	m	128.12	532,564	
Precision post grinding to achieve suitable gauge tolerance	90	m	128.12	11,531	
In situ works for car traps/entry and exit splays	144	m	1,024.96	147,595	
<u>Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks</u>					
Precast concrete kerb; half battered (HB2 125 x 255 x 915mm) laid straight or curved	11,394	m	20.19	230,043	
Precast concrete edgings; Laid straight or curved to radius exceeding 12m; 50mm x 150mm	6,560	m	13.72	90,006	
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	19,681	m ²	35.33	695,316	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					113,584
<u>Traffic Signs</u>					
Signs - allowance	1	nr	5,000.00	5,000	
<u>Road Markings</u>					
Road marking - allowance: to include ped crossings/adjoining roads/maintenance bays, traffic calming measures etc	31	shifts	1,000.00	31,000	

<u>Traffic Lights</u>					
Traffic signal installation; including: traffic signal head, 4m swan neck pole, NAL socket, pedestrian push button, pedestrian signal indicator, infrared detector, traffic detection loop	12	nr	5,332.00	63,984	
Traffic signal installation; controller cabinet	4	nr	3,400.00	13,600	
SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS					907,418
<u>Busway</u>					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	104	nr	1,671.12	173,796	
<u>Dual carriageway</u>					
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt - Allowance @ 20m centres	439	nr	1,671.12	733,622	
SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS					1,590,368
<u>Busway</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	2,080	m	27.52	57,242	
Cabling 3 core XLPE/SWA/PVC- Allowance	3,744	m	33.14	124,076	
Terminations at each column- Allowance	104	nr	86.83	9,030	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	6	nr	3,382.51	20,295	
Telensa CMS node - Allowance	104	nr	153.22	15,935	
New DNO Connections - Allowance	6	nr	15,000.00	90,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	2	nr	356.45	713	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	21	nr	575.75	12,091	
<u>Dual carriageway</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	7,777	m	27.52	214,010	
Cabling 3 core XLPE/SWA/PVC- Allowance	14,801	m	33.14	490,489	
Terminations at each column- Allowance	439	Item	86.83	38,118	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	22	nr	3,382.51	74,415	
Telensa CMS node - Allowance	439	nr	153.22	67,264	
New DNO Connections - Allowance	22	nr	15,000.00	330,000	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	5	nr	356.45	1,782	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	78	nr	575.75	44,909	
SERIES 1700: STRUCTURAL CONCRETE					-
Batching plant	1	item		-	

SERIES 2500: SPECIAL STRUCTURES					307,400
Bus stops (25m in length), including fittings	4	nr	41850.00	167,400	
Ticket Machines - Allowance	4	nr	35000.00	140,000	
SERIES 3000: LANDSCAPING AND ECOLOGY					1,825,944
Landscaping	88,862	m ²	20.00	1,777,234	
1.2m high clipped hedgerow (along the busway)	1,084	m	15.55	16,856	
Planting normal sized shrubs (3L pots) and trees	492	m ²	20.00	9,840	
Meadow planting (90% wildflower, 10% area to include tress)	17,794	m ²	0.81	14,340	
Extension to plantation woodland	5,758	m ²	1.33	7,674	
			Total	17,553,571	17,553,571
30% SURFACING RENEWALS					
SERIES 200: SITE CLEARANCE					50,708
General Site Clearance	23,476	m ²	2.16	50,708	
SERIES 600: EARTHWORKS					242,965
<u>Excavation</u>					
Excavation of artificial hard material: Carriageway	3,369	m ³	11.52	38,807	
Excavation of artificial hard material: Footpaths	1,240	m ³	11.52	14,284	
Extra over for breaking out surfacing	4,609	m ³	9.74	44,887	
<u>Disposal of Material</u>					
Disposal of acceptable material excluding Class 5A	4,609	m ³	28.23	130,099	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	18,381	m ²	0.81	14,888	
SERIES 700: PAVEMENTS					590,231
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth car park (top up)	368	m ²	0.99	363	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	12,476	m ²	25.44	317,398	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	12,476	m ²	10.72	133,791	
40mm Thin Surface course system	12,476	m ²	11.12	138,680	
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS					208,595
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	5,904	m ²	35.33	208,595	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					10,000
<u>Road Markings</u>					
Road Marking	10	shifts	1000.00	10,000	
			Total	1,102,498	

100% ROAD RESURFACE					
SERIES 200: SITE CLEARANCE					155,448
General Site Clearance	71,967	m ²	2.16	155,448	
SERIES 700: PAVEMENTS					979,857
Cold Milling					
Cold milling/planning; 40mm thick	71,967	m ²	2.00	143,934	
Pavement; Car Park					
<u>Pavement</u>					
Tack coat	71,967	m ²	0.50	35,983	
40mm Thin Surface course system	71,967	m ²	11.12	799,940	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					31,000
<u>Road Markings</u>					
Road Marking	31	shifts	1000.00	31,000	
Total				1,166,306	

9 Waterworks P&R

Cambridge to Cambourne

Waterworks P & R

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
INITIAL CONSTRUCTION					
SERIES 200: SITE CLEARANCE					137,685
General Site Clearance	63,743	m ²	2.16	137,685	
SERIES 300: FENCING					28,385
Close boarded fencing, 1.8m high, 125mm x 125mm concrete post, set in concrete foundation; painted	894	m	31.75	28,385	
SERIES 500: DRAINAGE AND SERVICE DUCTS					1,100,100
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	5,100	m	84.11	428,961	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	5	nr	277.32	1,387	
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	255	nr	491.64	125,368	
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	170	nr	3,084.61	524,384	
Drainage interceptor - Allowance	1	nr	10,000.00	10,000	
Outfalls - Allowance	1	nr	10,000.00	10,000	
SERIES 600: EARTHWORKS					1,769,100
<u>Excavation of Topsoil</u>					
Excavation of acceptable material Class 5A Topsoil 150mm	9,561	m ³	5.61	53,640	
<u>General Excavation</u>					
Excavation to sub-formation; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	21,751	m ³	1.49	32,409	
Excavation to attenuation pond; Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³	4,641	m ³	1.49	6,915	
<u>Deposition of Material</u>					
Traffic island and Verge; Deposition of acceptable material; excluding Class 5A; normal material, excluding hard or artificially hard material, <2500m ³	3,111	m ³	6.03	18,759	
<u>Imported Fill</u>					
Imported acceptable material; Capping material; Class 6F2; for carriageway, 240mm thk	15,081	m ³	40.64	612,904	
<u>Disposal of Material</u>					
Disposal of acceptable Class 5A topsoil	9,561	m ³	28.23	269,920	
Disposal of acceptable material excluding Class 5A	23,281	m ³	28.23	657,214	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material; carriageway	50,271	m ²	1.10	55,298	
Completion of sub-formation on acceptable material; footpath	7,741	m ²	1.10	8,515	
<u>Lining of Watercourses</u>					
Lining of new watercourse; attenuation pond	5,731	m ²	9.34	53,527	
SERIES 700: PAVEMENTS					2,872,435
Pavement; Car Park					
<u>Sub-Base</u>					
Imported granular sub-base; Type 1 aggregate; 200mm depth	50,271	m ³	9.86	495,672	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	50,271	m ²	25.44	1,278,894	
AC20 Dense binder course 40/60 Rec 60mm thick	50,271	m ²	10.72	539,086	
40mm Thin Surface course system	50,271	m ²	11.12	558,783	

Cambridge to Cambourne

Waterworks P & R

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
SERIES 1100: KERBS, FOOTWAYS AND PAVED AREAS					434,417
<u>Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks</u>					
Precast concrete kerb; half battered (HB2 125 x 255 x 915mm) laid straight or curved	5,633	m	20.19	113,730	
Precast concrete edgings; Laid straight or curved to radius exceeding 12m; 50mm x 150mm	3,440	m	13.72	47,197	
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	7,741	m ²	35.33	273,490	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					6,000
<u>Traffic Signs</u>					
Signs - allowance	1	nr	2,000.00	2,000	
<u>Road Markings</u>					
Road Marking	2	shifts	1,000.00	2,000	
White lining	2	shift	1,000.00	2,000	

Cambridge to Cambourne

Waterworks P & R

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS					136,897
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt	43	nr	1,671.12	71,858	
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 1 (BGP623 DW50 - 15klm neutral white LED) mounted at 0° tilt	6	nr	1,486.63	8,920	
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DW10 - 35klm neutral white LED) mounted at 0° tilt	8	nr	1,671.12	13,369	
CCTV					
Cameras to be mounted on Street lighting columns on 25% of SL poles - Allowance	14	nr	3,000.00	42,750	
SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS					275,054
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	2,500	m	27.52	68,800	
Cabling 3 core XLPE/SWA/PVC- Allowance	3,355	m	33.14	111,185	
CCTV communication cabling - Allowance	839	m	10.00	8,391	
Terminations at each column- Allowance	57	nr	86.83	4,949	
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	3	nr	3,382.51	10,148	
Telensa CMS node - Allowance	57	nr	153.22	8,734	
DNO connection within 2m of lv main (into feeder pillar) - Allowance	3	nr	15,000.00	45,000	
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	25	nr	575.75	14,394	
CCTV chambers 450 x 450 x 900 (allow 1 per 100m)	6	nr	575.75	3,455	
SERIES 2500: SPECIAL STRUCTURES					679,321
Park and Ride Building					
Building (assumed 3m height)	224	m ²	2,500.00	560,000	
Ticket machine @ Park and Ride - Allowance	2	nr	35,000.00	70,000	
Cycle Parking (Assumed Cycle Shelter - 10 Space Cycle Shelter & Bike Stands)	21	item	635.48	13,345	
Cycle boxes (Assumed bike away locker)	30	item	1,199.21	35,976	
SERIES 3000: LANDSCAPING AND ECOLOGY					37,929
<u>Seeding and Turfing</u>					
Seeding	6,481	m ²	0.54	3,521	
<u>Special Ecological Measures</u>					
Environmental barrier (assumed bare rooted native species whips)	1,865	m ²	18.45	34,408	
Total				7,477,321	7,477,321

Cambridge to Cambourne

Waterworks P & R

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
30% SURFACING RENEWALS					
SERIES 200: SITE CLEARANCE					37,592
General Site Clearance	17,404	m ²	2.16	37,592	
SERIES 600: EARTHWORKS					239,753
<u>Excavation</u>					
Excavation of artificial hard material; car park surface	4,072	m ³	11.52	46,909	
Excavation of artificial hard material; footpaths	488	m ³	11.52	5,618	
Extra over for breaking out surfacing	4,560	m ³	9.74	44,411	
<u>Disposal of Material</u>					
Disposal of acceptable material excluding Class 5A	4,560	m ³	28.23	128,718	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	17,404	m ²	0.81	14,097	
SERIES 700: PAVEMENTS					823,168
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth car park (top up)	348	m ²	0.99	343	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	17,404	m ²	25.44	442,748	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	17,404	m ²	10.72	186,629	
40mm Thin Surface course system	17,404	m ²	11.12	193,448	
SERIES 1100: KERBS, FOOTWAYS AND PAVED AREAS					82,047
<u>Footways and Paved Areas</u>					
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	2,322	m ²	35.33	82,047	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					2,000
<u>Road Markings</u>					
Road Marking	2	shifts	1000.00	2,000	
			Total	1,184,560	
CAR PARK RESURFACE					
SERIES 200: SITE CLEARANCE					125,306
General Site Clearance	58,012	m ²	2.16	125,306	
SERIES 700: PAVEMENTS					789,857
Pavement; Car Park					
Cold Milling					
Cold milling/planning; 40mm thick	58,012	m ²	2.00	116,024	
<u>Pavement</u>					
Tack coat	58,012	m ²	0.50	29,006	
40mm Thin Surface course system	58,012	m ²	11.12	644,827	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					2,000
<u>Road Markings</u>					

Mott MacDonald

Cambridge to Cambourne

Waterworks P & R

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
Road Marking	2	shifts	1000.00	2,000	
			Total	917,163	

10 Scotland Farm P&R

Cambridge to Cambourne

Scotland Farm P & R

Item	Qty	Unit	Unit rate £	Total £	Subtotal £
INITIAL CONSTRUCTION					
SERIES 200: SITE CLEARANCE					184,692
General Site Clearance	85,505	m ²	2.16	184,692	
SERIES 300: FENCING					31,274
Close boarded fencing, 1.8m high, 125mm x 125mm concrete post, set in concrete foundation; painted	985	m	31.75	31,274	
SERIES 500: DRAINAGE AND SERVICE DUCTS					1,194,664
<u>Drains and Service Ducts (Excluding Filter Drains, Narrow Filter Drains and Fin Drains)</u>					
<u>Foul Water</u>					
150mm diameter carrier drain with type S bed and surround; depth to invert not exceeding 2m	200	m	47.72	9,544	
Connections to existing drainage/outfalls; 150mm dia; depth to invert exceeding 2m but not exceeding 4m - allowance	1	nr	277.32	277	
<u>Storm Water</u>					
225mm diameter carrier drain with type S bed and surround; depth to invert 2m - 2.5m	5,500	m	84.11	462,605	
Connections to existing drainage/outfalls; 225mm dia; depth to invert exceeding 2m but not exceeding 4m	6	nr	277.32	1,525	
<u>Chambers and Gullies</u>					
Manhole; Depth : not exceeding 1.5 m; Type 2A (1.5m internal diameter) complete with allowance for concrete butt and rocker pipes	183	nr	3,084.61	565,512	
Precast concrete trapped gully with Class D400 grating and frame; 450mm x 750mm	275	nr	491.64	135,201	
Drainage interceptor - Allowance	1	nr	10,000.00	10,000	
<u>Headwalls and Outfall Works</u>					
Headwall and associated handrail/guardrail including outfall to attenuation pond - Allowance	1	nr	10,000.00	10,000	
SERIES 600: EARTHWORKS					2,208,818
<u>General Excavation</u>					
Excavation of acceptable material Class 5A Topsoil 150mm; excavate and set aside for re-use	12,826	m ³	5.61	71,953	
Excavation of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³ ; to form carpark and buildings	41,043	m ³	1.49	61,153	
Excavation of acceptable material excluding Class 5A; for attenuation pond	4,815	m ³	10.62	51,135	
Excavation of acceptable material excluding Class 5A; for naturalised pond - 1m deep	1,539	m ³	10.62	16,344	
<u>Deposition of Fill</u>					
Deposition of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³ ; Topsoil	12,826	m ³	3.01	38,606	
Deposition of acceptable material normal material, excluding hard or artificially hard material, excluding Class 5A; > 2500m ³ ; to form new traffic island	4,717	m ³	3.01	14,199	
<u>Disposal of Material</u>					
Disposal of acceptable Class 5A topsoil	11,186	m ³	28.23	315,768	
Disposal of acceptable material excluding Class 5A	42,679	m ³	28.23	1,204,833	
<u>Geotextiles</u>					
Geotextile separator (Terram 1000 or similar)	80,299	m ²	2.84	228,049	
<u>Topsoiling and Storage of Topsoiling</u>					

Topsoiling; Class 5A material excavated from site; 150mm thick; Sloping at 10 eg or less to the horizontal	10,935	m ²	1.10	12,029	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	80,299	m ²	1.10	88,329	
<u>Lining of Watercourses</u>					
Lining of new watercourse; attenuation pond	4,280	m ²	9.34	39,975	
Lining of new watercourse; naturalised pond	926	m ²	9.34	8,653	
<u>Gabion Walling and Mattresses</u>					
Gabion walls; mesh basket filled with suitable aggregate; to attenuation pond	225	m ³	256.85	57,791	
SERIES 700: PAVEMENTS					3,302,155
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 200mm depth; Car park	53,312	m ²	9.86	525,656	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick	53,312	m ²	25.44	1,356,257	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	53,312	m ²	10.72	571,696	
40mm Thin Surface course system	53,312	m ²	11.12	592,585	
Pavement; Access Road					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 200mm depth car park	4,480	m ²	9.86	44,173	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick in carriageway and car park	4,480	m ²	25.44	113,949	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	4,480	m ²	10.72	48,042	
40mm Thin Surface course system	4,480	m ²	11.12	49,797	
SERIES 1100: KERBS, FOOTWAYS AMD PAVED AREAS					333,241
<u>Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks</u>					
Precast concrete kerb; half battered (HB2 125 x 255 x 915mm) laid straight or curved	4,598	m	20.19	92,834	
Precast concrete kerbs (bus stop kerbs) laid straight or curved	144	m	190.76	27,469	
Precast concrete edging(s) laid straight or curved	1,094	m	13.72	15,014	
<u>Footways and Paved Areas</u>					
400mm square x 65mm thick buff tactile paving laid on 25mm to 35mm semidry mortar on 150mm thick type 1 subbase	609	m ²	85.87	52,295	
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	3,283	m ²	35.33	115,988	
Footpath type 2; comprising Type 1 granular material sub-base 150mm thick; 50mm thick compacted sand and 60mm thick buff pavers	609	m ²	48.67	29,640	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					6,000
<u>Traffic Signs</u>					
Signs - allowance	1	nr	2,000.00	2,000	
<u>Road Markings</u>					
Road Marking	2	shifts	1,000.00	2,000	
White lining	2	shift	1,000.00	2,000	
SERIES 1300: ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS					138,790
<u>Road Lighting Columns and Brackets, Wall Mountings, CCTV Masts and Cantilever Masts</u>					

8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DS50 - 40klm neutral white LED) mounted at 0° tilt	48	nr	1,671.12	80,214	
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 3 (BGP627 DW10 - 35klm neutral white LED) mounted at 0° tilt	4	nr	1,671.12	6,684	
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 1 (BGP623 DX10 - 11klm neutral white LED) mounted at 0° tilt	6	nr	1,091.66	6,550	
8m mounting height tubular galvanised steel column complete with a post top mounted Philips Luma 1 (BGP623 DS50 - 13.5klm neutral white LED) mounted at 0° tilt	1	nr	1,091.66	1,092	
CCTV cameras to be mounted on Street lighting columns on 25% of SL poles - Allowance	15	no	3,000.00	44,250	
SERIES 1400: ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS					233,706
<u>Cable and Duct</u>					
Street lighting duct; 1 way x 100mm diameter duct route in verge; not exceeding 1m deep to invert	2,500	m	27.52	68,800	
Cabling 3 core XLPE/SWA/PVC	3,444	m	33.14	114,134	
CCTV communication cabling - Allowance	861	m	10.00	8,613	
<u>Cable Joints and Terminations</u>					
Terminations at each column - Allowance	59	nr	86.83	5,123	
<u>Feeder Pillars</u>					
Tofco feeder pillar (medium), including DNO connection within 2m of LV main	3	nr	3,382.51	10,148	
Telensa CMS node - Allowance	59	nr	153.22	9,040	
<u>Chambers</u>					
Street lighting chambers 450 x 450 x 900 (allow 1 per 100m)	25	nr	575.75	14,394	
CCTV chambers 450 x 450 x 900 (allow 1 per 100m)	6	nr	575.75	3,455	
SERIES 2500: SPECIAL STRUCTURES					896,331
Passenger waiting structure	224	m²	3,500.00	784,000	
Ticket machine @ Park and Ride - Allowance	2	nr	35,000.00	70,000	
Cycle Parking (Assumed Cycle Shelter - 10 Space Cycle Shelter & Bike Stands)	10	item	635.48	6,355	
Cycle boxes (Assumed bike away locker)	30	item	1,199.21	35,976	
SERIES 3000: LANDSCAPING AND ECOLOGY					1,157,556
<u>Seeding and Turfing</u>					
Seeding	9,828	m²	0.54	5,339	
<u>Special Ecological Measures</u>					
Environmental barrier (assumed bare rooted native species whips)	62,453	m²	18.45	1,152,217	
			Total	9,687,227	

30% SURFACING RENEWALS					
SERIES 200: SITE CLEARANCE					55,408
General Site Clearance	25,652	m ²	2.16	55,408	
SERIES 600: EARTHWORKS					262,819
<u>Excavation</u>					
Excavation of artificial hard material; car park surface	4,318	m ³	11.52	49,746	
Excavation of artificial hard material; access road surface	363	m ³	11.52	4,180	
Excavation of artificial hard material; footpaths	272	m ³	11.52	3,136	
Extra over for breaking out surfacing	4,953	m ³	9.74	48,246	
<u>Disposal of Material</u>					
Disposal of acceptable material excluding Class 5A	4,953	m ³	28.23	139,833	
<u>Completion of Formation and Sub-formation</u>					
Completion of sub-formation on acceptable material	21,824	m ²	0.81	17,677	
SERIES 700: PAVEMENTS					1,124,136
Pavement; Car Park					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth car park (top up)	15,994	m ²	0.99	15,780	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 200mm thick in carriageway and car park	15,994	m ²	33.91	542,397	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	15,994	m ²	10.72	171,509	
40mm Thin Surface course system	15,994	m ²	11.12	177,775	
Pavement; Access Road					
<u>Sub-base</u>					
Imported granular sub-base; Type 1 aggregate; 20mm depth car park (top up)	4,480	m ²	1.09	4,888	
<u>Pavement</u>					
AC32 HDM base 40/60 Rec 150mm thick in carriageway and car park	4,480	m ²	25.44	113,949	
AC20 Dense binder course 40/60 Rec 60mm thick in carriageway and car park	4,480	m ²	10.72	48,042	
40mm Thin Surface course system	4,480	m ²	11.12	49,797	
SERIES 1100: KERBS, FOOTWAYS AND PAVED AREAS					38,994
<u>Footways and Paved Areas</u>					
400mm square x 65mm thick buff tactile paving laid on 25mm to 35mm semidry mortar on 150mm thick type 1 subbase	183	m ²	43.54	7,955	
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; AC20 DBM binder course 40/60 40mm thick; AC6 DBM surface course 20mm thick	985	m ²	22.66	22,315	
Footpath type 1; comprising Type 1 granular material sub-base 150mm thick; 50mm thick compacted sand and 60mm thick buff pavers	183	m ²	47.75	8,724	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					4,000
<u>Road Markings</u>					
Road Marking	2	shifts	1000.00	2,000	
White lining	2	shift	1,000.00	2,000	
			Total	1,485,357	

CAR PARK & ACCESS RD RESURFACE					
SERIES 200: SITE CLEARANCE					131,922
General Site Clearance	61,075	m²	2.16	131,922	
SERIES 700: PAVEMENTS					831,561
Cold Milling					
Cold milling/planning; 40mm thick	61,075	m²	2.00	122,150	
Pavement					
<u>Pavement</u>					
Tack coat	61,075	m²	0.50	30,538	
40mm Thin Surface course system	61,075	m²	11.12	678,874	
SERIES 1200: TRAFFIC SIGNS AND ROAD MARKINGS					2,000
<u>Road Markings</u>					
Road Marking	2	shifts	1000.00	2,000	
Total				965,483	

11 WLC Maintenance Costs

Description	Quantity	Units	Rate	4Q18 Total (£)	2Q19 Total (£)	Service Costs (£)	4Q19 Outturn Cost (£)
Street Cleaning							
Operated Road Sweeper Vehicle - Allowance	1	day	440.00	440.00	446.60	66.99	
	1	visit			446.60	66.99	513.59
Landscaping Maintenance							
Labourer	1	days	159.84	159.84	162.24	24.34	
Ride On Mower	1	days	53.00	53.00	53.80	8.07	
5.5m Hedgecutter with operator	1	days	250.00	250.00	253.75	38.06	
	1	visit			469.78	70.47	540.25
Gully cleansing / Emptying							
Labourer	1	day	159.84	159.84	162.24	24.34	
Gully Emptier	1	day	790.00	790.00	801.85	120.28	
	1	visit			964.09	144.61	1,108.70
Street & CCTV Lighting							
Labour	4	man.hr	19.98	79.92	81.12	12.17	
Cherrypicker	2	hr	14.39	28.78	29.21	4.38	
Electrical fittings	1	nr	550.00	550.00	558.25	83.74	
	1	nr			668.58	100.29	768.87
Kerbing							
Take up existing Kerbs and dispose off site	1	m	9.42	9.42	9.56	1.43	
HB2 Kerb	1	m	21.65	21.65	21.97	3.30	
	1	m			31.54	4.73	36.27
Bus Stops							
Fittings	2	nr	3,000.00	6,000.00	6,090.00	913.50	
					6,090.00	913.50	7,003.50
Traffic lights							
Allowance to fix new traffic lights	1	item	250,000.00				
					0.00	0.00	250,000.00
Fencing Maintenance							
Take up and remove from site boundary fencing	1	m	10.95	10.95	11.11	1.67	
Replacement fencing	1	m	30.55	30.55	31.01	4.65	
	1	m			42.12	6.32	48.44
General Inspection (2 bridges)							
Senior Engineer	50	hr	50.00		2,500.00	375.00	
Engineer	50	hr	40.00		2,000.00	300.00	
Gen. Labourer	100	man.hr	19.98	1,998.00	2,027.97	304.20	
Access Platform	30	hr	15.64	469.20	476.24	71.44	
Materials Allowance					2,000.00		
Senior Engineer	16	hr	50.00		800.00	120.00	
	1	m			9,804.21	1,170.63	10,974.84
Principal Inspection (2 bridges)							
Senior Engineer	200	hr	50.00		10,000.00	1,500.00	
Engineer	200	hr	40.00		8,000.00	1,200.00	
Gen. Labourer	200	man.hr	19.98	3,996.00	4,055.94	608.39	
Access Platform	50	hr	15.64	782.00	793.73	119.06	
Materials Allowance					2,000.00		
Senior Engineer	32	hr	50.00		1,600.00	240.00	
	1	m			26,449.67	3,667.45	30,117.12
Special Inspection (2 bridges)							
Senior Engineer	300	hr	50.00		15,000.00	2,250.00	
Engineer	300	hr	40.00		12,000.00	1,800.00	
Gen. Labourer	300	man.hr	19.98	5,994.00	6,083.91	912.59	
Access Platform	100	hr	15.64	1,564.00	1,587.46	238.12	
Materials Allowance					2,000.00		
Senior Engineer	40	hr	50.00		2,000.00	300.00	
	1	m			38,671.37	5,500.71	44,172.08
Bearing Replacement - Abutments (2 bridges)							
Senior Engineer	20	hr	50.00	1000	1,015.00	152.25	
Engineer	20	hr	40.00	800	812.00	121.80	
Gen. Labourer	40	hr	26.40	1056	1,071.84	160.78	
Bridge jacking	2	item	25,000.00		50,000.00		
Minor Materials	2	item	1,000.00		2,000.00		
Bearings	8	nr	3,750.00	15000	15,225.00	2,283.75	
Bearing Disposal	8	nr	15.00	60	60.90	9.14	
Testing of Bearings	8	nr	500.00	2000	2,030.00	304.50	
	1	m			72,214.74	3,032.21	75,246.95

12 Phase 1 WLC

Phase 1 Whole Life Costing

Location Ref	Work element Scenario 1	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)	1	2	3	4	5	6	7	8	9	10	
CAPITAL																			
	Construct Road	P80 estimate	1	item	63,756,407	63,756,407	1	63,756,407	63,756,407										
TOTAL COSTS - CAPITAL								63,756,407											
OPERATIONAL																			
	Power Consumption - Lighting	505nr lights x 254w = 13208w per hour = 128.27kW x 4,380 hours year = 561,822.60kW (as advised by DW Windsor)	561,823	kW	0.12	67,419	60	4,045,123	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	
TOTAL COST - OPERATIONAL								4,045,123											
Maintenance and Renewals																			
	General inspection - 2 Bridge Structures	Every two years	1	item	10,974.84	10,975	30	329,245		10,975		10,975		10,975		10,975		10,975	
	Principal inspection - 2 Bridge Structures	Every six years	1	item	30,117.12	30,117	10	301,171						30,117					
	Special inspection - 2 Bridge Structures	Every twenty years	1	item	44,172.08	44,172	3	132,516											
	Bearing Replacement - 2 Bridge Structures	Every 30 years	1	item	75,246.95	75,247	2	150,494											
	Bridge Deck Resurfacing (Full depth) - 2 Bridge Structures	Every 20 Years	1	item	320,657.36	320,657	3	961,972											
	100% Road Resurfacing	Every 20 Years	1	item	1,423,260.38	1,423,260	3	4,269,781										1,423,260	
	30% Renew Road and Footpaths	Every 20 Years	1	item	1,752,901.41	1,752,901	2	3,505,803											
	Landscaping maintenance	Yearly	1	item	540.25	540	60	32,415	540	540	540	540	540	540	540	540	540	540	
	Street Cleaning	Yearly	1	item	513.59	514	60	30,815	514	514	514	514	514	514	514	514	514	514	
	Gully Cleansing / Emptying	Yearly	1	item	1,108.70	1,109	60	66,522	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	
	Street Lighting	Every 20 Years	505	nr	768.87	388,639	2	777,277											
	Kerb Replacement	10% every 20 years	286	m	36.27	10,362	2	20,724											
	Fencing	Every 20 Years	2340	m	48.44	113,352	2	226,703											
TOTAL COST - MAINTENANCE								10,805,439											
TOTAL COST								78,606,969											
Subtotals								63,825,988	80,556	69,581	80,556	69,581	110,673	69,581	80,556	69,581	80,556	69,581	1,503,816

NPV @ 3.5%	0.9662	0.9335	0.9019	0.8714	0.8420	0.8135	0.7860	0.7594	0.7337	0.7089
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NPV (2019) Total	£67,424,939	61,667,621	75,200	62,758	70,200	58,586	90,033	54,690	61,175	51,054	1,066,084
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38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
																						0
67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419	67,419
10,975		10,975		10,975		10,975		10,975		10,975		10,975		10,975		10,975		10,975		10,975		10,975
				30,117						30,117						30,117						30,117
		44,172																				44,172
																						75,247
		320,657																				320,657
												1,423,260										
		1,752,901																				
540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109
		388,639																				
		10,362																				
		113,352																				
80,556	69,581	2,710,639	69,581	110,673	69,581	80,556	69,581	80,556	69,581	110,673	69,581	1,503,816	69,581	80,556	69,581	110,673	69,581	80,556	69,581	80,556	69,581	550,750
0.2706	0.2614	0.2526	0.2440	0.2358	0.2278	0.2201	0.2127	0.2055	0.1985	0.1918	0.1853	0.1791	0.1730	0.1671	0.1615	0.1560	0.1508	0.1457	0.1407	0.1360	0.1314	0.1269
21,795	18,189	684,633	16,980	26,094	15,851	17,731	14,797	16,552	13,813	21,228	12,895	269,263	12,037	13,465	11,237	17,269	10,490	11,734	9,792	10,954	9,141	69,909

£78,606,968.55

£67,424,939.44 Net Present Value Total Sum

13 Option 1 WLC

Mott Macdonald

Option 1 Whole Life Costing

Location Ref	Work element Scenario 1	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)	1	2	3	4	5	6	7	8	9	10	
CAPITAL																			
	Construct Road	P80 estimate	1	item	47,619,348.39	47,619,348	1	47,619,348	47,619,348										
TOTAL COSTS - CAPITAL								47,619,348											
OPERATIONAL																			
	Power Consumption - Lighting (Luma 3)	418nr lights x 254w = 106,172w per hour = 106.17kW x 4,380 hours year = 465,025kW (as advised by DW Windsor)	465,025	KW	0.12	55,803	60	3,348,180	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	
TOTAL COST - OPERATIONAL								3,348,180											
Maintenance and Renewals																			
	100% Road Resurfacing	Every 20 Years	1	item	1,694,742.98	1,694,743	3	5,084,229										1,694,743	
	30% Renew Road and Footpaths	Every 20 Years	1	item	2,527,524.62	2,527,525	2	5,055,049											
	Landscaping maintenance	Yearly	1	item	540.25	540	60	32,415	540	540	540	540	540	540	540	540	540	540	
	Street Cleaning	Yearly	1	item	513.59	514	60	30,815	514	514	514	514	514	514	514	514	514	514	
	Gully Cleansing / Emptying	Yearly	1	item	1,108.70	1,109	60	66,522	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	
	Street Lighting	Every 20 Years	418	nr	768.87	321,387	2	642,773											
	Kerb Replacement	10% every 20 years	532	m	36.27	19,293	2	38,587											
TOTAL COST - MAINTENANCE								10,950,391											
TOTAL COST								61,917,919											
Subtotals									47,677,314	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	1,752,709

NPV @ 3.5%	0.9662	0.9335	0.9019	0.8714	0.8420	0.8135	0.7860	0.7594	0.7337	0.7089
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NPV (2019) Total	£51,729,543.53	46,065,038	54,111	52,282	50,514	48,805	47,155	45,560	44,020	42,531	1,242,528
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38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60		
55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	55,803	
												1,694,743												
		2,527,525																						
540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	
514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	
1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	
		321,387																						
		19,293																						
57,966	57,966	2,926,170	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	1,752,709	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	57,966	£61,917,918.98
0.2706	0.2614	0.2526	0.2440	0.2358	0.2278	0.2201	0.2127	0.2055	0.1985	0.1918	0.1853	0.1791	0.1730	0.1671	0.1615	0.1560	0.1508	0.1457	0.1407	0.1360	0.1314	0.1269		
15,683	15,153	739,070	14,145	13,667	13,205	12,758	12,327	11,910	11,507	11,118	10,742	313,828	10,028	9,689	9,361	9,045	8,739	8,443	8,158	7,882	7,615	7,358	£51,729,543.53 Net Present Value Total Sum	

14 Option 2 WLC

Mott Macdonald

Option 2 Whole Life Costing

Location Ref	Work element Scenario 1	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)	1	2	3	4	5	6	7	8	9	10	
CAPITAL																			
	Construct Road	P80 estimate	1	item	27,365,073.29	27,365,073	1	27,365,073	27,365,073										
TOTAL COSTS - CAPITAL								27,365,073											
OPERATIONAL																			
	Power Consumption - Lighting (Luma 3)	231nr lights x 254w = 58,674w per hour = 58.67kW x 4,380 hours year = 256,975kW (as advised by DW Windsor)	256,975	KW	0.12	30,837	60	1,850,220	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	
TOTAL COST - OPERATIONAL								1,850,220											
Maintenance and Renewals																			
	Resurfacing Road	Every 10 Years	1	item	1,596,643.37	1,596,643	3	4,789,930										1,596,643	
	Renew Road and Footpaths	Every 20 Years	1	item	2,850,557.88	2,850,558	2	5,701,116											
	Landscaping maintenance	Yearly	1	item	540.25	540	60	32,415	540	540	540	540	540	540	540	540	540	540	
	Street Cleaning	Yearly	1	item	513.59	514	60	30,815	514	514	514	514	514	514	514	514	514	514	
	Gully Cleansing / Emptying	Yearly	1	item	1,108.70	1,109	60	66,522	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	
	Street Lighting	Every 20 Years	231	nr	768.87	177,608	2	355,217											
	Kerb Replacement	10% every 20 years	506	m	36.27	18,345	2	36,689											
TOTAL COST - MAINTENANCE								11,012,704											
TOTAL COST								40,227,998											
Subtotals								27,398,073	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	1,629,643

NPV @ 3.5%	0.9662	0.9335	0.9019	0.8714	0.8420	0.8135	0.7860	0.7594	0.7337	0.7089
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NPV (2019) Total	£31,550,010.78	26,471,568	30,805	29,764	28,757	27,785	26,845	25,937	25,060	24,213	1,155,285
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38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837	30,837
													1,596,643									
		2,850,558																				
	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109
		177,608																				
		18,345																				
33,000	33,000	3,079,510	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	1,629,643	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
£40,227,997.61																						
0.2706	0.2614	0.2526	0.2440	0.2358	0.2278	0.2201	0.2127	0.2055	0.1985	0.1918	0.1853	0.1791	0.1730	0.1671	0.1615	0.1560	0.1508	0.1457	0.1407	0.1360	0.1314	0.1269
8,928	8,626	777,800	8,053	7,781	7,517	7,263	7,018	6,780	6,551	6,330	6,115	291,793	5,709	5,516	5,329	5,149	4,975	4,807	4,644	4,487	4,335	4,189
£31,550,010.78 Net Present Value Total Sum																						

15 Option 3 WLC

Mott Macdonald

Option 3 Whole Life Costing

Location Ref	Work element Scenario 1	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)	1	2	3	4	5	6	7	8	9	10		
CAPITAL																				
	Construct Road	P80 estimate	1	item	43,196,700.58	43,196,701	1	43,196,701	43,196,701											
TOTAL COSTS - CAPITAL								43,196,701												
OPERATIONAL																				
	Power Consumption - Lighting (Luma 3)	543nr lights x 254w = 137,922w per hour = 137.92kW x 4,380 hours year = 604,090kW (as advised by DW Windsor)	604,090	kW	0.12	72,491	60	4,349,448	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491		
TOTAL COST - OPERATIONAL								4,349,448												
Maintenance and Renewals																				
	Resurfacing Road	Every 10 Years	1	item	2,732,258.61	2,732,259	3	8,196,776										2,732,259		
	Renew Road and Footpaths	Every 20 Years	1	item	2,890,388.53	2,890,389	2	5,780,777												
	Landscaping maintenance	Yearly	1	item	540.25	540	60	32,415	540	540	540	540	540	540	540	540	540	540		
	Street Cleaning	Yearly	1	item	513.59	514	60	30,815	514	514	514	514	514	514	514	514	514	514		
	Gully Cleansing / Emptying	Yearly	1	item	1,108.70	1,109	60	66,522	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109		
	Street Lighting	Every 20 Years	543	nr	768.87	417,495	2	834,990												
	Kerb Replacement	10% every 20 years	1139	m	36.27	41,322	2	82,644												
TOTAL COST - MAINTENANCE								15,024,939												
TOTAL COST								62,571,088												
Subtotals								43,271,354	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	2,806,912

NPV @ 3.5%	0.9662	0.9335	0.9019	0.8714	0.8420	0.8135	0.7860	0.7594	0.7337	0.7089
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NPV (2019) Total	£49,526,878.24	41,808,071	69,690	67,333	65,056	62,856	60,731	58,677	56,693	54,775	1,989,873
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Year																										
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491
																					2,732,259					
									2,890,389																	
540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109
									417,495																	
									41,322																	
74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	3,423,859	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	2,806,912	74,653	74,653	74,653	74,653	74,653	74,653	74,653
0.6849	0.6618	0.6394	0.6178	0.5969	0.5767	0.5572	0.5384	0.5202	0.5026	0.4856	0.4692	0.4533	0.4380	0.4231	0.4088	0.3950	0.3817	0.3687	0.3563	0.3442	0.3326	0.3213	0.3105	0.3000	0.2898	0.2800
51,133	49,404	47,734	46,119	44,560	43,053	41,597	40,190	38,831	1,720,715	36,249	35,024	33,839	32,695	31,589	30,521	29,489	28,492	27,528	1,000,042	25,698	24,829	23,989	23,178	22,394	21,637	20,905

38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491	72,491
		2,890,389																				
												2,732,259										
540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109
		417,495																				
		41,322																				
74,653	74,653	3,423,859	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	2,806,912	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653	74,653
0.2706	0.2614	0.2526	0.2440	0.2358	0.2278	0.2201	0.2127	0.2055	0.1985	0.1918	0.1853	0.1791	0.1730	0.1671	0.1615	0.1560	0.1508	0.1457	0.1407	0.1360	0.1314	0.1269
20,198	19,515	864,772	18,218	17,602	17,006	16,431	15,876	15,339	14,820	14,319	13,835	502,587	12,915	12,478	12,056	11,649	11,255	10,874	10,506	10,151	9,808	9,476

£62,571,087.80

£49,526,878.24 Net Present Value Total Sum

16 Waterworks P&R WLC

Mott Macdonald

Waterworks Park and Ride Whole Life Costing

Location Ref	Work element Scenario 1	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)	1	2	3	4	5	6	7	8	9	10	11	12		
CAPITAL																						
	Construct Car Park	P80 estimate	1	item	17,056,883.92	17,056,884	1	17,056,884	17,056,884													
TOTAL COSTS - CAPITAL								17,056,884														
OPERATIONAL																						
	General Cleaning for the P&R building	Daily and 2 people for 2hrs at £15/hr required plus 10% to cover consumables/disposal	1,460	hr	16.50	24,090	60	1,445,400	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090		
	Utilities cost for the P&R building	Yearly	224.00	m2	23.67	5,302	60	318,125	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302		
	Monitor CCTV cameras	Allow 1 person hour per day to monitor the cameras (overtime paid to cover additional requirement)	365	hr	20.00	7,300	60	438,000	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300		
	Power Consumption - Lighting (Luma 3)	51nr lights x 254w = 13,206w per hour = 12.95kW x 4,380 hours year = 56,739kW (as advised by DW Windsor)	56,739	kW	0.12	6,809	60	408,521	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809		
	Power Consumption - Lighting (Luma 1)	6nr lights x 107w = 642w per hour = 0.64kW x 4,380 hours year = 2,803kW (as advised by DW Windsor)	2,803	kW	0.12	336	60	20,182	336	336	336	336	336	336	336	336	336	336	336	336		
	Power Consumption - CCTV Cameras	Allow 25% of the above	14,886	kW	0.12	1,786	60	107,176	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786		
TOTAL COST - OPERATIONAL								2,737,403														
Maintenance and Renewals																						
	Resurfacing Car Park and Access Road	Every 10 Years	1	item	2,718,173.55	2,718,174	3	8,154,521											2,718,174			
	Renew Car Park, Access Road and Footpath	Every 20 Years	1	item	2,104,586.19	2,104,586	2	4,209,172														
	Landscaping maintenance	Yearly	1	item	540.25	540	60	32,415	540	540	540	540	540	540	540	540	540	540	540	540		
	Street Cleaning	Yearly	1	item	513.59	514	60	30,815	514	514	514	514	514	514	514	514	514	514	514	514		
	Gully Cleansing / Emptying	Yearly	1	item	1,108.70	1,109	60	66,522	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109		
	Street Lighting	Every 20 Years	57	nr	768.87	43,825	2	87,651														
	CCTV	Every 20 Years	14	nr	768.87	10,956	2	21,913														
	Fencing	Every 20 Years	89	m	48.44	4,331	2	8,661														
	General Maintenance- Building	Yearly	1	item	6,557.56	6,558	60	393,454	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558		
	Cycle Parking	Every 20 Years	1	item	49,321.26	49,321	2	98,643														
TOTAL COST - MAINTENANCE								13,103,766														
TOTAL COST								32,898,053														
Subtotals								17,111,227	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	2,772,517	54,343	54,343
NPV @ 3.5%									0.9662	0.9335	0.9019	0.8714	0.8420	0.8135	0.7860	0.7594	0.7337	0.7089	0.6849	0.6618		
NPV (2019) Total									£22,888,889.98	16,532,587	50,730	49,015	47,357	45,756	44,208	42,713	41,269	39,873	1,965,489	37,222	35,964	

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090
5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302
7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300
6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809	6,809
336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336
1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786	1,786
									2,718,174									
540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514
1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109
6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558
54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	2,772,517	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343	54,343
0.2358	0.2278	0.2201	0.2127	0.2055	0.1985	0.1918	0.1853	0.1791	0.1730	0.1671	0.1615	0.1560	0.1508	0.1457	0.1407	0.1360	0.1314	0.1269
12,813	12,380	11,961	11,557	11,166	10,788	10,423	10,071	496,429	9,401	9,083	8,776	8,479	8,193	7,916	7,648	7,389	7,139	6,898

£32,898,053.08

£22,888,889.98 Net Present Value Total Sum

17 Scotland Farm P&R WLC

Mott Macdonald

Scotland Farm Park and Ride Whole Life Costing

Location Ref	Work element Scenario 1	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)	1	2	3	4	5	6	7	8	9	10	11	12	
CAPITAL																					
	Construct Car Park	P80 estimate	1	item	22,098,007.94	22,098,008	1	22,098,008	22,098,008												
TOTAL COSTS - CAPITAL								22,098,008													
OPERATIONAL																					
	General Cleaning for the P&R building	Daily and 2 people for 2hrs at £15/hr required plus 10% to cover consumables/disposal	1,460	hr	16.50	24,090	60	1,445,400	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	24,090	
	Utilities cost for the P&R building	Yearly	224.00	m2	23.67	5,302	60	318,125	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	5,302	
	Monitor CCTV cameras	Allow 1 person hour per day to monitor the cameras (overtime paid to cover additional requirement)	365	hr	15.00	5,475	60	328,500	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	
	Power Consumption - Lighting (Luma 3)	52nr lights x 254w = 13208w per hour = 13.21kW x 4,380 hours year = 57860kW (as advised by DW Windsor)	57,860	kW	0.12	6,943	60	416,592	6,943	6,943	6,943	6,943	6,943	6,943	6,943	6,943	6,943	6,943	6,943	6,943	
	Power Consumption - Lighting (Luma 1)	7nr lights x 107w = 749w per hour = 0.75kW x 4,380 hours year = 3285kW (as advised by DW Windsor)	3,285	kW	0.12	394	60	23,652	394	394	394	394	394	394	394	394	394	394	394	394	
	Power Consumption - CCTV Cameras	Allow 25% of the above	14,465	kW	0.12	1,736	60	104,148	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	
TOTAL COST - OPERATIONAL								2,636,417													
Maintenance and Renewals																					
	Resurfacing Car Park and Access Road	Every 10 Years	1	item	3,408,402.01	3,408,402	3	10,225,206											3,408,402		
	Renew Car Park, Access Road and Footpat	Every 20 Years	1	item	2,215,464.81	2,215,465	2	4,430,930													
	Landscaping maintenance	Yearly	1	item	540.25	540	60	32,415	540	540	540	540	540	540	540	540	540	540	540	540	
	Street Cleaning	Yearly	1	item	513.59	514	60	30,815	514	514	514	514	514	514	514	514	514	514	514	514	
	Gully Cleansing / Emptying	Yearly	1	item	1,108.70	1,109	60	66,522	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109	
	Street Lighting	Every 20 Years	59	nr	768.87	45,363	2	90,726													
	CCTV	Every 20 Years	15	nr	768.87	11,341	2	22,682													
	Fencing	Every 20 Years	99	m	48.44	4,771	2	9,543													
	General Maintenance- Building	Yearly	1	item	6,557.56	6,558	60	393,454	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	6,558	
	Cycle Parking	Every 20 Years	1	item	42,331.01	42,331	2	84,662													
TOTAL COST - MAINTENANCE								15,386,954													
TOTAL COST								40,121,379													
Subtotals									22,150,668	52,660	52,660	52,660	52,660	52,660	52,660	52,660	52,660	52,660	3,461,062	52,660	52,660
NPV @ 3.5%									0.9662	0.9335	0.9019	0.8714	0.8420	0.8135	0.7860	0.7594	0.7337	0.7089	0.6849	0.6618	
NPV (2019) Total									£28,656,608.36	21,401,612	49,159	47,497	45,890	44,339	42,839	41,391	39,991	38,639	2,453,612	36,070	34,850

