



# **Cambridge South East Transport Phase 2**

Outline Business Case  
Appendix K: Project Costs Breakdown

15 May 2020

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# Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	15/05/20	S Stallwood	T Seale	R Walker	For Issue

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# 1 Assumptions and Exclusions

## **Francis Crick Avenue and Preferred Option**

### **General Assumptions**

- 1 The Cost Estimating Methodology and Guidance Procedure prepared for Great Cambridge Partnership has been followed for this estimate.
- 2 Works expected to be carried out in normal working hours 08:00 to 18:00, Monday to Friday.
- 3 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.
- 4 All excavated and disposed material is assumed as inert.
- 5 Where possible budget quotations have been used from specialist subcontractors.
- 6 Allowance (2.5% of the Base Cost Estimate) for environmental mitigation measures is included.
- 7 Base date is currently 2Q20. Initial construction start date is not known. Therefore, inflation has been excluded
- 8 No demolitions required to clear the site in advance of construction works
- 9 Updated Rate Book dated 29 April 2019 used for pricing purposes, therefore the rates have been uplifted to the base date.
- 10 Boundary fencing is post and rail type and is required to Francis Crick Avenue and the Travel Hub site only.
- 11 Site Clearance - no existing street lighting and associated works to be removed.
- 12 No road restraints
- 13 Francis Crick Avenue - Allowance for new drainage ditch (SUDS system) and infilling the existing (assumed to be 1m wide x 0.5m deep) at . Allowance for a gully every 200m2 of road with a 3.5m, 150 dia pipe connection from every gully to the ditch.  
Main Route - Allowance for a 225 dia carrier drain (type S bed and surround) with gullies every 200m2 of road and catchpits every 50m. Connection to existing outfalls included
- 14 Cut and fill quantities have been provided by MM design team. The excavation covers to road formation but filling does not cover sub bases so an additional item has been included for imported fill to these. Excavated material is suitable for reuse on site with any additional fill required to be imported
- 15 No Gabion Walls required for attenuation ponds
- 16 There is no existing fencing to be removed or new fencing required to the new road
- 17 Ducting and cabling included to perimeter of stop car park. Allowance for 1 duct chamber at the stop car parks. No requirement for feeder pillar
- 18 Drainage included to the perimeter of the stop car park
- 19 Travel Hub site will have a Gridforce GF50 geogrid system as a permanent solution for the area
- 20 The footbridge upgrade scheme (CSET Phase 1, Scheme 8) has now been incorporated within CSET Phase 2. The estimate has been included. The base date of this estimate is 4Q18. Therefore, the appropriate inflation has
- 21 5% of total number of spaces requires electric charging points
- 22 A high level cost for the solar panel canopies has been included for reference only. This cost has been **excluded** from the Construction Summary until further design work has been completed on this particular area
- 23 Please see estimate tabs for further assumptions

### **General Exclusions**

- 1 Optimism Bias
- 2 VAT
- 3 3rd party compensation costs
- 4 Planning and approval charges
- 5 Land purchase or rental
- 6 Costs associated with Statutory Fees (e.g. HMRI, Local Authority, etc.)
- 7 Costs associated with taxes, levies and licences
- 8 Costs associated with changes in legislation and any form of applicable standards
- 9 Allowances for unforeseen ground conditions / provisions for ground stabilisation
- 10 Christmas, Easter and Bank Holiday working
- 11 Archaeological digs
- 12 Re-location of affected businesses
- 13 Works that have not been specifically included for in the estimate
- 14 Road diversions
- 15 Cost of reinforcing a high pressure gas main (to be provided by Cadent/National Grid)

***Francis Crick Avenue and Preferred Option***

16	Other than 2.5% allowance for environmental mitigation (Assumption 6), no allowance has been made for specific items of environmental mitigation or planting of areas allocated for biodiversity net gain.
17	Visual/noise barriers
18	No consideration for interface with existing public highway or requirements for joints
19	Soakaways
20	Service diversions

## 2 Construction Summary





## 3 Whole Life Costs

CSET Phase 2 - CBC to A11

Location Ref	Work Element	Assumptions	Quantity	Unit	Rate (£)	Cost per occurrence (£)	# Occurrences	Total Cost (£)
<b>OPERATIONAL</b>								
	Utilities cost for the P&R building	Yearly	224.00	m2	23.67	5,302	60	318,125
	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
	Power Consumption - Lighting (based on a Luma 3) - Travel Hub	129nr lights x 254w = 32766w per hour = 32.77kW x 4,380 hours year = 143533kW (as advised by DW Windsor)	143,533	kW	0.12	17,224	60	1,033,438
	Power Consumption - Lighting (Luma 1) - stop car parks	12nr lights x 254w = 3048w per hour = 3.05kW x 4,380 hours year = 13359kW (as advised by DW Windsor)	13,359	kW	0.12	1,603	60	96,185
	Power Consumption - CCTV Cameras	Allow 25% of the above	39,223	kW	0.12	4,707	60	282,406
<b>TOTAL COST - OPERATIONAL</b>								<b>2,058,653</b>
<b>MAINTENANCE</b>								
	General inspection - River Granta Structure	3 nr structures require inspection every two years	2	nr	16,459.08	32,918	18	592,527
	Principal inspection - River Granta Structure	3 nr structures require inspection every six years	2	nr	34,387.26	68,775	9	618,971
	Special inspection - River Granta Structure	3 nr structures require inspection every twenty years	2	nr	60,675.44	121,351	3	364,053
	General inspection - Access Track Structure	3 nr structures require inspection every two years	1	nr	2,948.37	2,948	18	53,071
	Principal inspection - Access Track Structure	3 nr structures require inspection every six years	1	nr	6,052.91	6,053	9	54,476
	Special inspection - Access Track Structure	3 nr structures require inspection every twenty years	1	nr	9,813.60	9,814	3	29,441
	General Cleaning for the Travel Hub 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
	General Maintenance- Building	Replace every year	1	item	19,568.15	19,568	60	1,174,089
	Landscaping maintenance	Annually	1	item	16,577.37	16,577	60	994,642

	Minor maintenance repairs to structures (general wear and tear)	Annually for 3 structures	1	item	15,000.00	15,000	60	900,000
<b>TOTAL COST - MAINTENANCE</b>								<b>6,226,669</b>
<b>RENEWALS</b>								
	Resurfacing Main Route, Circulation Areas and Stops	Replace every 25 years	1	item	3,538,054.50	3,538,055	2	7,076,109
	Car Park - Replacement of Gridforce	Replace every 25 years	1	item	3,721,657.50	3,721,658	2	7,443,315
	Resurfacing Footpath - Tarmac	Replace every 25 years	1	item	599,009.96	599,010	2	1,198,020
	Replacement of Hard Paving	Replace every 25 years	1	item	742,520.00	742,520	2	1,485,040
	Street Cleaning	Replace every year	1	item	9,455.60	9,456	60	567,336
	Gully Cleansing / Emptying	Replace every year	1	item	9,619.20	9,619	60	577,152
	Replace Street Lighting - Travel Hub and Stops	Replace every 25 years	1	item	97,060.75	97,061	2	194,121
	Fencing	Replace every 30 years	1	item	79,535.06	79,535	2	159,070
	Cycle Parking	Replace every 15 years	1	item	103,200.00	103,200	4	412,800
	Replace kerbing and edgings	Replace every 20 years	1	item	218,293.47	218,293	3	654,880
	Replace deck waterproofing	Replace every 20 years	1,557	m2	100.00	155,700	3	467,100
	Bearing replacement	3 nr structures require bearing replacement every 40 years	1	item	146,652.05	146,652	1	146,652
	CCTV cameras and poles	Every 10 years	1	item	29,841.23	29,841	6	179,047
<b>TOTAL COST - RENEWALS</b>								<b>20,560,643</b>

Subtotals

NPV @ 3%

**NPV Total £11,147,412.47**

