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Cc: Jonathan Whittaker, Jacobs

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Subject: North Essex Rapid Transit Study: Infrastructure cost assumptions

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This note shows how infrastructure costs have been broken down by section, in the North Essex Rapid Transit Study.

It should be noted that comparison with the Garden Community specific estimates and the earlier Colchester Rapid Transit Study should only be expected to show an approximate consistency. This is because the studies have been carried out for different objectives and over different geographical extents.

The Garden Community infrastructure studies and earlier Colchester Rapid Transit study have, largely, considered local infrastructure (albeit strategically connected). This has enabled studies to itemise costs at local levels. However, the Colchester Rapid Transit Study found that it would be difficult to justify local rapid transit schemes on economic grounds by limiting patronage to garden community growth capped to 2033.

Consequently, the North Essex Rapid Transit Study devised a sub-regional rapid transit system through key destinations and considered all development growth beyond 2033. For this assessment, broad brush cost estimates have been used. It is hoped that by providing a breakdown of costs by section, it will enable a comparison to be made with other studies.

Following an initial comparison with costs presented in the Garden Community Movement and Access Study and in the Hvas reports, cost estimates do appear consistent. For example, in the Movement and Access Study the rapid transit scheme from Colchester to Marks Tey with a loop through the Colchester Braintree Garden Community is estimated at £45m for BRT, £120-145m for GBRT and £210m+ for a tram-train system. These costs are comparable with the highlighted rows in the table overleaf. (In addition, we know costs are consistent with the Colchester Rapid Transit study.)

#### Costs per km

Estimates are based on the following costs (2010 prices), as shown in Table 7.3, p89 (NE Rapid Transit Study)

Mode	Urban cost (£m / km)	Interurban (£m /km)
BRT	2	1.3
GBRT	7.5	6
LRT	15	7.5

### Costs per section

To apply the costs, the proposed rapid transit system was divided into sections. Then proportions of each section were classified as 'urban' or 'inter-urban'.

The table below shows the lengths per section (km); the proportion of each section that is urban and inter-urban; and the costs per section for the three options of BRT, GBRT and LRT (£m in 2010 prices.)

Description	Distance (km)	% Urban	% Inter-urban	Option 1 BRT cost (£m)	Option 2 GBRT cost (£m)	Option 1 LRT cost (£m)
TC GC to Hythe	4.2	100%	0%	8.37	31.38	62.76
Hythe to university	2.1	100%	0%	4.18	15.69	31.38
Hythe to Colchester centre	1.8	100%	0%	3.54	13.28	26.55
Colchester centre to Colchester station	2.6	100%	0%	5.15	19.31	38.62
Colchester centre to Marks Tey	10.9	100%	0%	21.89	82.08	164.15
Marks Tey to CBB GC	5.1	0%	100%	6.69	30.90	38.62
CBB GC to Braintree centre	15.9	30%	70%	24.09	102.84	155.70
Braintree centre to WoB GC	3.4	100%	0%	6.76	25.35	50.69
WoB GC to Great Dunmow	12.7	0%	100%	16.53	76.28	95.35
Great Dunmow to Stansted	10.5	0%	100%	13.60	62.76	78.46
Braintree centre to Chelmsford	20.9	45%	55%	33.73	139.53	226.92
TOTAL	90.1	-	-	144.53	599.40	969.23